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German Train Decelerations

THE year 1937 for the first time for many years past has shown a slight turn in the tide of German railway acceleration. It is true that the German railways can still boast the fastest railway runs in the world, with the successive 82·3 m.p.h. Berlin—Hanover and 82·2 m.p.h. Hanover—Hamm runs of the Fliegende Kölner diesel train (the withdrawal of which has proved to have been a temporary measure only); and the fastest steam-operated runs in Europe are still those of the non-stop Berlin—Hamburg FD expresses booked at 74·2 and 73·7 m.p.h. Elsewhere, however, there have been numerous slight decelerations of the fastest services, whether with diesel units, steam-operated, or electrically-worked. As compared with 1936, the diesel mileage booked for start-to-stop at over 75 m.p.h. has fallen by 205 miles, although the twelve runs comprising the remaining 1,504 miles are still collectively the fastest in Europe. Steam runs booked at over 64 m.p.h. from start-to-stop have dropped in aggregate mileage from 1,372 to 915 miles; and while in 1936 the fastest electric run was booked at 69·5 m.p.h. from start-to-stop, 1937 shows nothing as fast as 67 m.p.h. On the other hand, the aggregate of all German runs booked at over 60 m.p.h. from start-to-stop rose from 7,982 miles in 1936 to 8,235 miles in 1937.

Assisting the Trader in India

An interesting proposal has recently been put forward jointly by the three railways with headquarters in Calcutta—the East Indian, Eastern Bengal, and Bengal-Nagpur—for the formation of a central railway organisation to advise registered subscribers of changes taking place from time to time in the freight rates applicable to various commodities. The present practice is for these changes to be notified in the railways' rate circulars issued on an average once a fortnight, but as the lists of rates in these circulars are necessarily very long, it is difficult for merchants to pick out those in which they are specially interested. The proposal visualises the formation of a central office, under the supervision of the General Secretary of the Indian Railway Conference Association, to register all applications from firms or individuals for notice of changes in rates for specific commodities. Such a central office would have to be self-supporting, and an annual registration fee of Rs. 15 (say 1 guinea) is recommended. This proposal is in strict accordance with the recommendations of the Wedgwood Committee, that railway administrations should not lose any opportunity for getting into closer touch with the public, making things easier for their clients, and simplifying the rates question.

* * * *

The Week's Traffics

A satisfactory increase of £148,000 is shown in the combined traffics of the four main line railways for the past week, comparing with £97,000 for the previous week and £187,000 for the week before that. For the year to date the combined earnings have reached £142,270,000, an increase of £6,017,000 or 4·42 per cent. In passenger train traffics the percentage increases for the 45 weeks are:—Southern 5·10, L.N.E.R. 4·64, L.M.S.R. 4·08, and Great Western 2·80. Corresponding percentage increases in merchandise receipts are:—Great Western 4·42, L.N.E.R. 3·63, and L.M.S.R. 3·19. Percentage gains in coal earnings are:—Great Western 11·45, L.N.E.R. 6·78, and L.M.S.R. 6·13.

	45th Week				Year to date	
	Pass., &c.	Goods, &c.	Coal, &c.	Total	Inc. or Dec.	
	£	£	£	£	£	%
L.M.S.R. ..	+ 26,000	+ 24,000	+ 18,000	+ 68,000	+ 2,275,000	+ 4·13
L.N.E.R. ..	+ 14,000	+ 11,000	+ 19,000	+ 44,000	+ 1,930,000	+ 4·82
G.W.R. ..	+ 1,000	+ 12,000	+ 11,000	+ 24,000	+ 1,170,000	+ 5 12
S.R.	+ 11,000	+ 3,000	− 2,000	+ 12,000	+ 642,000	+ 3·51

Belfast & County Down traffics for the past week show an increase of £165, but Great Northern and Great Southern receipts are down £200 and £1,134 respectively because of goods traffic decreases.

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New Traffics for Argentine Railways

Two chairmen of Argentine railways have alluded in their speeches at the recent annual meetings to the dependence of their companies upon grain transport, and the considerable fluctuations in receipts caused by variable harvests. Sir Follett Holt told Buenos Ayres Western shareholders of the part to be played by the railway in educating farmers in modern methods of crop rotation and cultivation; but Mr. W. Howard-Williams, speaking at the Central Argentine Railway meeting reported on page 899, looked forward to some counterbalancing of variable grain traffics on that system by a sustained transport demand from new industries now being developed. He regarded it as an encouraging prospect that cotton cultivation had been gradually extended to the provinces of Tucumán and Santiago, served by the railway, and that the whole of the company's territory (had been reported by experts to be suitable for growing tobacco. Tobacco

production is still experimental, but the railway has collaborated with the Provincial Government of Santiago del Estero in investigating possibilities of its extension. The exchange difficulty still threatens to nullify railway enterprise, but Mr. Howard-Williams is not without hope of alleviation from a Government which recognises the railways' hardships.

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Overseas Railway Traffics

Receipts of the allied Argentine North Eastern and Entre Rios Railways have been affected during the past fortnight by strikes arising out of disputes as to restoration of pay cuts. Buenos Ayres & Pacific traffics have dropped £15,261 in the two weeks after a series of increases, and the Buenos Ayres Western figures have improved only £1,983 during the same period. The Buenos Ayres Great Southern shows an improvement of £12,941 in the two weeks, but the Central Argentine is down a further £60,637. At this time a year ago the Central Argentine had an aggregate increase of £393,612.

	No. of Week	Weekly Traffics	Inc. or Decrease	Aggregate Traffic	Inc. or Decrease
		£	£	£	£
Buenos Ayres & Pacific ..	20th	72,891	— 7,521	1,561,788	+ 62,506
Buenos Ayres Great Southern ..	20th	132,072	+ 7,896	2,408,003	+ 195,160
Buenos Ayres Western	20th	48,759	+ 2,759	909,120	+ 106,006
Central Argentine	20th	117,199	— 22,670	2,561,333	— 187,796
Canadian Pacific	45th	610,400	+ 5,800	24,576,600	+ 1,133,400
Bombay, Baroda & Central India	30th	211,350	— 15,825	5,266,125	+ 331,425

Great Western of Brazil traffics increased last week by £500, but those of the Leopoldina were £3,787 lower. San Paulo receipts for the previous week were £3,690 up.

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Chimney or Funnel?

From time to time the point is raised in the lay press as to what is the "correct" name for the smoke uptake of a locomotive, and recently the old question has been given a new lease of life in the correspondence columns of a daily newspaper. Dictionaries are not helpful, as the meanings of both the words chimney and funnel meet the case of a locomotive equally well. Undoubtedly the matter is one of usage, and the long standing practice in British locomotive circles of adopting only the word chimney is as well-recognised as the maritime use, on the other hand, of the word funnel—only the veriest landlubber would think of that essential feature of a ship's beauty as a chimney. Moreover, the exclusive use of the word chimney in connection with locomotives seems to date back to the earliest days of steam traction, for we find that in February, 1804, Richard Trevithick referred to the chimney of his "tram-waggon," and the earliest volumes of Herapath's *Railway Magazine* adopted the same term without hesitation. Apparently the limited use at Swindon of the word funnel—why, it would be interesting to know—has inspired the present revival of the old topic.

* * * *

Southern Pacific

A writer in *Fortune*, a handsome magazine from the U.S.A., has succeeded in producing a graphic and human account of a great railway system. His subject—a vast one—is the Southern Pacific, and the colour infused into it, both from his own pen and from the numerous coloured illustrations accompanying the article, make the contribution of interest to readers with tastes as widely varied as the activities comprised in so huge an enterprise. The anonymous author defines the Southern Pacific in a great many ways. It is, he begins, "one billion nine hundred and forty-nine million dollars; it is the nation's only transcontinental railroad"; "it is 48,000,000 revenue tons of freight and about 52,000,000 passengers." Of the system's 16,000 miles of track, over 80 per cent. is single, for the railway runs across the "melancholy emptiness of New Mexico and Arizona," where water for the locomotives must be piped 150 miles. Its most important single traffic, the author reveals, is lettuce, of which the railway hauls 50,000 carloads a year. And finally, "the Southern Pacific is men." Ending thus on a note of human interest, the article contrasts with some sketches of forceful personalities the irreverent fact that the General Manager even of so awesome an undertaking rejoices, whoever he may be, in the nickname of "whiskers."

* * * *

Paris Metro Station Lighting

Underground railway station lighting has received a great deal of thought in this country because of the many extensions that have been made during the past few years to the underground railway system of London. The lighting equipment at the new stations has created new standards in illumination, and it has not been possible to leave the older stations unimproved because of the painful contrasts that must have been perpetuated by such a policy. The Paris Metro, having started a campaign against old-fashioned station lighting, is now committed to an extensive programme of modification which involves the use of alternating current, fed to the stations at 3,000 volts, instead of the direct current hitherto employed. Neon and other discharge tubes can be used now that this high voltage is available, but low-voltage filament-lamps can still be installed where desired, due to the provision of small transformers at each station. The old d.c. lighting is being retained for emergency use, and there are automatic relays for bringing it into operation whenever the a.c. lighting fails. The availability of two voltages widens the scope for lighting improvements, and already some effective and original conversions have been made. In one station, discharge tubes emitting different coloured light run parallel to one another in suitable fittings which blend the colours to produce an almost white light. Elsewhere blue discharge tubes are used in place of metallic ones to suspend filament-lamp fittings.

* * * *

Rock Island Must Keep its A.T.C.

In an editorial note in our issue of August 6, 1937, we referred to the application being made by the Chicago, Rock Island & Pacific Railway to the Interstate Commerce Commission to be allowed to discontinue its intermittent ramp system of A.T.C. between Blue Island and Rock Island, 166 miles of double line, pleading that the apparatus was of out-of-date type, no longer made, and unsuited to the operation of the Rocket railcar trains. It is now announced that the application has been refused. The commission says the apparatus is still working correctly and there is stock replacement material still on hand. Further it is uncertain whether there will be difficulties with the railcar trains, and if there are whether they cannot be easily overcome. Altered traffic conditions call for more, not less, safety and A.T.C. should be kept in service. There is need for devices which will effectively counteract the risk of signals being disobeyed, especially where increased speeds obtain. It may, however, be necessary later to adopt different apparatus on this railway. At the present time there are 10,477 route miles of line and 9,125 locomotives in the U.S.A. fitted with train control and/or cab signal equipment. Some lines have in recent years been permitted to remove such apparatus where traffic had markedly declined, while cab signals alone have been authorised on 4,148 track miles and 2,631 locomotives.

Accidents to Railway Employees

The management of the Cundinamarca Railway, of Bogota, Colombia, has adopted a graphic method of illustrating, in the yearly report, the incidence of industrial accidents occurring to the employees of the railway while on service. An anatomical diagram of a full length human figure is shown, on which the number of accidents is indicated by a corresponding number of dots in the positions of the injuries. In the report for the year 1935 the diagram shows that out of the total of 250 accidents during the year, the greatest number, 87, were cases of injury to the hands, while 50 cases referred to injuries to the feet, 35 to the legs, and 19 to the head and face. The distribution of accidents between the different departments, also indicated on the diagram, showed that 46 per cent. of the total number occurred in the Engineering Department, and 37 per cent. in the Traffic Department, while the workshops are shown with the surprisingly small proportion of only 17 per cent. A statistical summary is also given in the report of the causes leading to time lost through sickness.

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Less Common Locomotive Fuels

We in this country are so used to assume that good quality coal is essential for a satisfactorily steaming locomotive boiler, that other fuels are apt to be overlooked. Actually, of course, oil is largely used in many countries with great success, and has certain advantages over coal; also there is a great deal of wood fuel burnt for less exacting duties. Low grade coals requiring large grates and other special appliances are, moreover, extensively used, and to a more limited extent there are briquettes —generally mixed with low grade coal—and pulverised coal. The proximity of the source of supply or cost of freight usually dictates what fuel can be used most economically, but there are a few notable exceptions; Burma for instance—which is the home of fuel oil—burns nothing but coal on main, and coal or wood on secondary lines. But occasionally it happens that unusual fuels are found in tenders and fireboxes, as when Brazil was glutted with coffee and this drug-in-the-market was substituted for coal or wood. More recently on the Kenya & Uganda Railways, waste weevil-infected maize was tried in a 4-8-0 type locomotive. The tests proved that though full-capacity freighted loads could be hauled, there were many disadvantages entailed. Firing was difficult and the maintenance of the heavy fire that was essential tired out three men. Refuelling had to be frequent, and a brick arch and special grate fitted. Other unusual fuels have also been burnt in emergency or experimentally, but not, we believe, with much success.

* * * *

What Streamlining Weighs

A correspondent, in a communication on various railway topics, calls attention to what he describes as " the excessive addition to the weight of a locomotive when streamlining is resorted to." The large area of plating, supporting brackets and other fittings involved must, he asserts, in the case of the largest engines even in this country, run into several tons, and that, in his opinion, has a substantial bearing upon the question whether streamlining is worth while. At a time when locomotive designers are seeking to reduce weight by using thinner plates for the boilers, reducing rod sections, and, wherever possible, cutting down the number of component parts—also by adopting welding instead of riveting, and so on—is it not a mistake, our correspondent asks, to pile on weight by covering the locomotive with shrouding, which not only spoils its appearance but makes it heavier, and in the end has a very doubtful value at the speeds worked to? The L.N.E.R. " Sandringham " class is cited as an example. This engine (without its tender) weighs 77 tons 5 cwt. as originally built; and 80 tons 10 cwt. when streamlined, a difference of 3¼ tons; and much the same variation occurs in other cases. The *Princess Royal* on the L.M.S.R. weighs 104 tons 10 cwt., and the streamlined " Princess Coronation " class 108 tons 2 cwt., this, of course, being a larger engine altogether. Our correspondent's contention that streamlining is not worth while in view of the added weight, is open to debate. In any case, it is not without significance that in the " Sandringham " class the adhesion weight of the streamlined engine is 2 tons 3 cwt. more than as originally planned.

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Locomotive Mileage in Peace and War

Last week we summarised the paper entitled " Modern Development in Railway Operating Practice " read by Mr. V. M. Barrington-Ward, on November 8, at a meeting of the Institute of Transport. During the discussion of the paper, Lieut.-Col. A. H. L. Mount called attention to the fact that economics, coupled with the wonderful staying power of the modern steam locomotive, its flexibility, and adaptability, made the justification of its suppression today more difficult than ever. Its amazing increase in efficiency is illustrated by the fact that although the annual steam train mileage of the main-line railways has risen during the last ten years by 5 per cent., the number of their steam locomotives has decreased by 17 per cent., from 21,600 to 18,000, the latter figure, of course, including some thousands of new engines. Col. Mount added that he personally felt great care should be taken to see that in suppressing steam haulage, the estimated return on electric traction was not inflated by neglecting relevant expenditure, such as for signalling and other works necessary to cope with traffic expected under the changed conditions. The burden on British railways in war would, he said, be onerous, and sufficiently organised as they were today for peace-time operation on an economic basis, the fact should be borne in mind that the consequent reduction of locomotive stock tended to lessen the margin which was so useful in war, when power and speed were comparatively minor considerations. In August, 1914, there were some 23,600 steam locomotives in this country, compared with 19,900 today.

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Zones of Silence

We see that a newspaper columnist, seeking a simile for idle talk, has written of " the chatter in a railway waiting room." The phrase does not strike us as having been very carefully chosen, for waiting rooms are among the few remaining places where man, awed by the tardy mystery of time, relapses into reverential silence. Ranged in formal rows upon the unyielding benches, or grouped in listless attitudes about the central table, we lay aside for a salutary space the burden of our personalities. Who knows what differences might not be adjusted were the talks and conferences of modern diplomacy to be held in railway waiting rooms? A fellow feeling makes us wondrous kind, and if there is one feeling common to authoritarian and humanitarian alike, we suppose it to be that which proceeds from a hard seat and the knowledge that release must wait upon the inexorable processes of time and the train service. As servants of the public, the railways now provide waiting rooms with gay decoration and alluring upholstery; but as asylums for wholesome meditation by men of all creeds, the old style waiting rooms hold something in their favour.

The Latest L.M.S Hotel

IT is difficult to imagine what Manchester would be like without the Midland Hotel which was opened over 34 years ago, in September 1903. It is a striking testimony to the practical imagination of the late Sir William Towle. Ever since then, in addition to accommodating visitors to Manchester, it has fulfilled the function of a sort of unofficial city hall where the residents of Manchester and surrounding districts have foregathered for business meetings, social functions or private entertainment. The Midland Adelphi Hotel at Liverpool, opened some ten years later, has served a similar purpose for that city.

Last week, the London Midland & Scottish Railway, with the opening of the new Queen's Hotel at Leeds, completed its triumvirate of hotels in the cities of Manchester, Liverpool and Leeds. An illustrated description of the new hotel and an account of the official opening, appears elsewhere in this issue. It was opened by Lord Harewood, accompanied by the Princess Royal, and is the first occasion on which an hotel has been formally opened by a member of the Royal family. The only possible precedent was on June 5, 1854, when the Prince Consort, accompanied by the Prince of Wales who afterwards became King Edward VII, visited the G.W.R. Royal Hotel at Paddington. It was considered at the time that this visit was made in connection with the opening of the hotel, as in fact it was opened as and from that date, although there was actually no official opening ceremony.

The popularity of the former Midland Railway with the travelling public was in a great measure due to the way in which it studied passenger comfort by the high standard of its rolling stock, the general excellence of its restaurant car services and the courtesy and efficiency of the staff employed thereon, and also to its hotels which both in their design and service struck an entirely new note in provincial hotels. Since the Midland Railway became a constituent of the present London Midland & Scottish Railway, the board in our opinion, has most wisely continued the same policy with even increased vigour and imagination. Since Mr. Arthur Towle was appointed Controller of the whole of the L.M.S. Hotel, Refreshment Room, and Restaurant Car Services in 1925, great improvements have been effected in the hotels at Euston, Glasgow, Edinburgh, and Manchester in addition to the opening of new hotels at Stratford-on-Avon, Morecambe, Stoke-on-Trent and the Kyle of Lochalsh. The hotels are of two categories; the holiday resort hotels of which Gleneagles and Turnberry are notable examples, and the hotels in business centres. Altogether the company now owns and operates no fewer than twenty-six hotels, and has a stock of over 300 restaurant cars. For the last financial year the receipts from hotels, refreshment rooms and cars amounted to £2,985,241, and the surplus of revenue over expenditure was £388,872.

In the past there has been some criticism on the part of shareholders and others regarding the hotel enterprises of British railways, and, last year, Mr. Arthur Towle contributed an article on this subject to the monthly journal of the British Railway Stockholders' Union, which we commented on at the time. Concerning the view that the provision of hotel accommodation should be left to separate private enterprise, Mr. Towle observed that, with certain notable exceptions, such as London and well-known spas and resorts, the cities and towns where hotels have not been provided by railway companies are less well equipped in this respect than those places which have been so favoured. Moreover, if it be taken for granted that railway companies are still the parties most interested in transport, it would seem reasonable that they should have some jurisdiction over the accommodation their passengers receive, and it is only by themselves owning and conducting hotels that such control can be exercised effectively. The patronage of hotels in the provincial cities, particularly manufacturing cities, bears little relation to the conditions prevalent in London, where there is not only a business clientele but a pleasure-seeking one. In provincial towns, hotels are used largely for three or four nights a week only, and the hotel has to be conducted during the week-ends with a considerable proportion of its rooms vacant. In the larger cities there is, of course, local business to be done for residents in that area, and this is an important function of the railway hotel as it forms an ever-present connection between the local business community and the railway company, although such business—from a financial point of view—cannot entirely recompense the hotel in a provincial centre for the more even standard of letting which exists in hotels in the West End of London. Largely for this reason, provincial hotels frequently cannot quote the lower charges (by comparison with similar charges in London) to which the public sometimes feels entitled. This condition probably also accounts for the comparatively small amount of hotel development in the provinces by individual private enterprise.

The functions of a railway hotel were summarised by Mr. Towle as: (*a*) to foster travel, both for business and pleasure; (*b*) to exercise in the district in which it is situated such functions as will provide a focus from which the owning company can deal with the tourist and transport services in the neighbourhood; (*c*) to help the owning company, by the amenities offered, to keep travellers to the railways; and (*d*) to increase, as an economic entity in its due proportion, the net earnings of the company.

How greatly local opinion welcomes this latest enterprise of the L.M.S.R. is shown by the following extract from a leading article in the *Yorkshire Post*. "The leading hotel of an industrial city does far more than accommodate visitors, however efficiently it may perform this primary task It serves also as a centre for all kinds of gatherings, for banquets and memorial dinners, for dances and seasonal festivities, for conferences and business negotiations. Here, at lunch time, friends and colleagues and competitors find it easy and pleasant to meet, sometimes simply for good food and talk, sometimes for those informal discussions which are often so fruitful in getting business done. Here, at tea time, ladies are entertained, and many good reasons will be found by hard-worked industrialists for tearing themselves away from their offices to join—of course, only for a few minutes—in these social occasions. By dinner time the city's work is mostly over, but not the work of the hotel manager and his staff. In the banqueting room there is a public dinner, perhaps, with toasts and speeches. Some part of the hotel may have been engaged for one of those private parties which many people nowadays find it difficult to give in their own homes. In the main restaurant it is the hour of shaded lights and music, with dancing, probably, and a hint of romance in the air. And even when its public rooms are empty the hotel is still at work, for its service never halts and its entrance doors are never locked . . With the opening of the new Queen's Hotel the city of Leeds will indeed acquire an active new organism in its midst, and one from which its social and commercial life will surely draw stimulus and invigoration for many years to come."

Holidays With Pay

THE practicability of granting holidays with pay by employers to their workpeople has been much discussed of late. A few months ago a Private Member's Bill on the subject was given a second reading in the House of Commons and the Government then decided that the matter merited investigation. Accordingly, the Minister of Labour appointed a committee under the Chairmanship of Lord Amulree, whose wide general experience, notably as President of the Industrial Court, and as chairman of Royal Commissions, specially fitted him to guide the official enquiry. The committee has taken much evidence from individuals and public bodies, and, in all likelihood, has been impressed by the growing tide of public opinion in favour of holidays with pay, as well as by the fact that important groups of workers, like those in the engineering industry and railway shopmen, have recently been granted holidays with pay to operate for the first time in 1938. The railway companies are interested in the problem from more than one angle. Thus, their views as employers of over half-a-million workpeople covered by comprehensive and effective machinery of negotiation must command attention. Then, too, the fact that many hundreds of thousands of workpeople in other industries and occupations throughout the country will, in future, be entitled to paid holidays is likely to bring greatly increased traffic to the railways and the holiday resorts they serve.

At the invitation of the Government Committee of Inquiry, therefore, Mr. Kenelm Kerr, Chairman of the Railway Staff Conference, on Wednesday appeared before the committee and gave evidence on the staff and labour aspects, and Mr. C. J. Selway, Chairman of the R.C.H. Superintendents' Conference, dealt particularly with the Earlier Holidays Movement and explained the willingness of the companies and the holiday resorts, to co-operate in any practical scheme to mitigate the disadvantages of the present concentration of holidays. The companies' views thus given are summarised in our news section. Mr. Kenelm Kerr showed that out of a total staff of approximately 573,000, over 538,000 employees of the railway companies receive holidays with pay and, in addition, 27,000 are granted holidays although not provided by agreement. The only sections not allowed paid holidays are confined almost entirely to grades coming within the dock industry, concerning which negotiations are already in progress. The companies, while having no objection in principle to the granting of holidays with pay, emphasise that the provision involves considerable cost, that it is in essence an enhancement of wages, and that " it should be regarded as an integral part of the comprehensive contract of service." They consider that the question is a matter for each industry to deal with and is not suitable for settlement by statutory enactment. We agree with these views and also with the statement made by Mr. Kerr that " any legislative measures compelling an industry to grant holidays with pay, irrespective of the particular circumstances of that industry, would in the view of the railway companies be adverse to the economic position of the industry, and would constitute a grave disservice to the valuable principle of settling wages and conditions of service by means of organised voluntary collective negotiation."

Mr. Selway drew the committee's attention to the already wide disparity in the amount of passenger traffic to be handled during July and August as compared with other periods, and suggested that a certain amount of inconvenience to the travelling public in general is likely to ensue if additional large sections are able to travel in July and August to holiday resorts. Mr. Selway pointed out that the movement of holiday travel is mainly concentrated on Saturdays during a limited period and, " in consequence a heavy burden is imposed on the railways in the provision of large quantities of working plant which during the greater part of the year are in excess of requirements and could be more effectively employed if the flow of traffic were more even over a longer period of the year. Any increase of railway travel at weekends in the height of the summer is therefore bound to impose a heavier burden on the railways in the provision of rolling stock, engine power, and other facilities." In support of this Mr. Selway gave a number of interesting statistical comparisons, including a statement of the total number of passenger trains (booked and relief) dealt with at selected points on Saturdays June 5 and July 31 this year. Examples are given of Crewe, York, and Taunton, but perhaps the most striking figures were in respect of Victoria (S.R.), 116 in June and 252 in July, and Waterloo (S.R.), 62 and 163 respectively.

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Spanish Railway Nationalisation

THE Decree of the Valencia Government dated October 21, 1937, nationalising the railways, is signed by the Minister of Communications, Transports and Public Works, Señor Giner de los Rios, and countersigned by the President of the Republic, Señor Manuel Azaña. The preamble, a not very convincing effort to justify the action of the Government, refers to the railways as really the property of the State since these were leased to the concessionnaires for a period, two-thirds of which has already expired in the majority of cases. Not only in the present abnormal circumstances but because the railways are a public service they should not be " subordinated to private interests." The State has contributed more than two thousand millions of pesetas to the principal lines. All this, it says, points to the convenience of a more direct control by the State and by the employees' representatives " who have already shown their competency in the matter." Article 1 says that with all the railways, of broad and narrow gauge, taken over under the Decrees of August 3 and December 26, 1936, there shall be formed a " National Railways " system, " passing to the State the assets and liabilities of the undertakings," in the conditions laid down in Articles 2 and 3 of the Decree of August 3, 1936 (see THE RAILWAY GAZETTE of August 28, 1936). Clause 2 refers to the unification of the accountancy. Article 3 creates a " National Railway Council " composed of a President and eighteen members, from among whom a secretary is to be elected. Of the eighteen members, nine are to represent the State, six the workers, and the remaining three are the heads of the technical services. The President will be the Minister of Communications, Transports, and Public Works, and the members representing the State will be drawn from various Government departments. The representatives of the workers are to be elected by the men, one to be an engine driver, one a platelayer, and the third a stationmaster or booking clerk. Article 4 provides for the creation of the services of the administration under the National Council, these being the technical, commercial, financial, juridical, and social. The technical services are those of traction and rolling stock, way and works, and operation. Article 5 provides for the division of the National system into various divisions, for each of which a delegation of the National Council will be appointed. Article 6 refers to the drafting and approval of the rules for the functioning of the National Council and the general regulations for the working of the system. Article 7 says the Government will dictate later the orders for the railways of a specialised nature, including the Metropolitan lines of Madrid and

Barcelona. Article 8 reads that the first consideration of the new administration must be to ensure that the earnings of the railway system shall suffice to cover the working expenditure, and Article 9 refers to the estimates of receipts and expenditure which the National Council is to submit to the Government each year. Under Article 10 the National Council may submit proposals for varying the estimates, creating new services, &c. Article 11 provides for the dissolution of the Working Committees created by the Decree of August 3, 1936, when the National Railway Council has been constituted, and also provides for the handing over to the new council of the services, funds, stocks, &c. Articles 12, 13, and 14 relate to the re-election of members, &c.

The first reflection prompted by this Decree is one of surprise that the Valencia Government, on the eve of its removal to Barcelona and in time of war, should have considered it necessary to take this radical step of nationalising the railways, or such of the railways as are still working in the Eastern Provinces. The Decree of August, 1936, was perhaps justified, primarily as a war measure, but really because the workers' committees had already seized the railways. It may be that the reason for the new Decree is to save the railways from the tender mercies of the Workers' Committees, and to assert the new-found authority of the Government over the extremists, but this is no excuse for what amounts to wholesale confiscation. The new Decree provides for taking over "all the assets and liabilities of the undertakings," but does not as much as mention the real owners of the railways, that is the companies and their shareholders and debenture holders, with whose initiative and capital was built up the railway system which has contributed so greatly to Spain's development. It may be another step towards the "collectivisation" of which so much has been heard, but there has hitherto been no such manifest proof that "collectivisation" meant confiscation, and in this new Decree there is not the slightest attempt to disguise the true intentions of the Government. It cannot surely be alleged that in voluntarily taking over the "assets and liabilities" the Government is prepared to draw up a balance between the two, in favour of or against the original owners or creditors, because in this case provision could have been made for a settlement, or at least for hearing the interested parties. As the railway companies are entirely ignored in the new Decree it can only be assumed that the intention is to confirm the seizure of the lines and so confiscate the property of the shareholders, notwithstanding the old and new legislation, and the very Constitution that the Valencia Government is supposed to uphold. The Decree ends with the old formula, that "account will be given to the Cortes," but this, with the present constitution of the Cortes, it is to be feared is but an empty formality.

LETTERS TO THE EDITOR

(*The Editor is not responsible for the opinions of correspondents*)

"Bradshaw"

56, St. Mary's Mansions,
Paddington, W.2
November 15

TO THE EDITOR OF THE RAILWAY GAZETTE

SIR,—I was interested to read the notice (on page 615 of the November 12 issue) of the winter edition of *Bradshaw*, but although I agree with your reviewer that *Bradshaw's* supremacy in Great Britain is most unlikely to be successfully challenged, there are reforms which certainly ought to be urged upon its publishers. The standard of accuracy is very much below that of pre-war days—it is quite usual now to find errors on the pages which record alterations of train-service—and there are examples throughout the book of misplaced trains (wrong order of columns) even where space is available for a proper time-sequence to be observed. You mention the deplorable results of "compression" in certain suburban tables, but the sectionising and compression of main timetables is equally bad (the Dublin and Belfast service of the Great Northern of Ireland is an example) and the time has undoubtedly come when the summer issues should contain special "Saturdays only" pages in order to reduce the multitude of column-notes. Many of these, even in the winter issues, are quite unnecessary—why, for instance, should a Euston to Birmingham express carry the TC note, or be specially referred to as an "express, London to Wolverhampton" on page 474?—and there are even cases where a train is shown in one column, with a note of a Saturday variation in every station time, although the adjacent column is free for a "Saturdays only" and "Saturdays excepted" timing. To those of us who value *Bradshaw* as a handy record of train service changes, it is most unfortunate that alterations no longer coincide with the date of publication of the guide, or are not announced to the publishers in time for inclusion in the forthcoming issue, but I do seriously urge a real revision and simplification of the tables, for the planning of which Messrs. Blacklock should obtain the advice of travellers who have used the guide for many years, and study recent improvements in Continental timetables. *Bradshaw*, even at five times its pre-war price, still compares reasonably with the French *Indicateur* at fr. 15, or the German guide at RM. 2·50, but its contents are not so clearly and logically displayed.

Yours faithfully,
R. E. CHARLEWOOD

Fast Freight Train Running

National Liberal Club, Whitehall Place, S.W.1,
and 27, Lion Chambers, Huddersfield.
November 8

TO THE EDITOR OF THE RAILWAY GAZETTE

SIR,—The article on page 799 of your issue of November 5 dealing with fast freight train running on the L.N.E.R. main line, is of great interest, and recalls the work of the L.M.S.R. fully fitted freight trains between Huddersfield and Broad Street, the up train leaving Huddersfield at 9.20 p.m., and its counterpart leaving Camden at 9.40 p.m. Whilst the average overall speed of these trains is considerably less than that of the L.N.E.R. train recorded, the locomotive work involved is probably more exacting. These trains are routed over the Charnel Valley section of the former North Staffordshire Railway, and before reaching the "speeding ground" of the L.M.S.R. main line at Nuneaton the up train has to face the very difficult start from Hillhouse sidings, Huddersfield, to Standedge, and the tortuous route from Diggle to Stockport; this is followed by the Churnet section, hardly suited for fast running, to Tutbury, where the only stop is made, for engine purposes. I have not my figures with me, but I believe the average speed over this section is approximately 30 m.p.h. Between Burton and Nuneaton the line is mostly single track. From Rugby the train is given the fast road, and the average between Tutbury and Willesden is approximately 35 m.p.h.

The down train has almost as arduous a task. The regular loading in the up direction is 40 wagons, and owing to the route used engine power is restricted to the parallel-boiler 2-6-0 class, the same engine and men working the train throughout. The engines concerned must be worked to the limit of their powers on these trains, and I believe their record over a period of seven years has been extremely good.

Yours truly,
PATRICK E. HIRST

PUBLICATIONS RECEIVED

Railways' Athletic Association Official Year Book, 1936-37. Thornton Heath: P. W. Holdaway, Hon. Gen. Secretary, 36, Grove Road. 8½ in. × 5½ in. 315 pp.—It is a splendid tribute to the organisers and supporters of the Railways' Athletic Association that within ten years of its inauguration such a wide range of interest and activity in so many fields of amateur sport as are touched upon in this review of the R.A.A.'s past year's work, should have been built up. Football, athletics, billiards, bowls, chess, cricket, golf, hockey, rifle-shooting, swimming and tennis all have their enthusiastic following under the R.A.A. This year book gives, besides the portraits of the President, Vice-Presidents and officers of the association for 1936-37, reports from the various section secretaries, and reproductions from photographs taken at the principal meetings and of committees. The reports must be gratifying to the many railway officers whose support, both active and pecuniary, does so much to make these organised meetings possible and so promotes a friendly team spirit amongst those engaged in all branches of the railway service.

Principles of Advertising for Engineers. By C. W. Hanson. London: Morgan Brothers (Publishers) Limited, Proprietor of *The Engineer*, 28, Essex Street, Strand, W.C.2. 8 in. × 5¼ in. 68 pp. Price 3s. 6d. net.—The advertising problems of the engineer are shown by Mr. Hanson to begin with the fact that he is addressing an analytically-minded audience. Purchasers of engineering equipment are not likely to be swayed in their choice by mere familiarity of name unsupported by positive knowledge of attributes. When objects are sold at sixpence a packet, both the solemnity of decision and the consequences of disappointment are at a minimum. A title or slogan that sticks in the mind for some reason of attractiveness or repetition is, however, of little use to the engineering advertiser. His requirement is scientific planning rather than a stream of brilliant ideas. After discussing the policy and finance of advertising, Mr. Hanson attacks the question of media—or the presentation of the right advertisement in the right setting. While, as is shown in the earlier chapters, the engineering public is not swayed by catchiness, it does allow itself to be influenced by evidence of knowledge and responsibility. The merit of advertising in the specialised technical press is shown by the author to be more than the obvious one that such advertisements are addressed to so large a proportion of interested readers; it proceeds also from the authority and conviction shed by valued editorial matter upon the advertising pages which accompany it. Practical advice is given upon the preparation of advertisements, and the circumstances in which such matters are profitably handled by agents. In this connection Mr. Hanson acknowledges the "valuable sources of help to the advertiser" constituted by technical papers which in their own advertising departments and studios undertake the preparation of clients' publicity, and advises full use of the expert services so furnished. There is a useful chapter on press liaison, in which Mr. Hanson shows how such work can be conducted in a manner profitable to advertisers and editorial departments alike. He contrasts with such well-ordered liaison the statements sometimes circulated to the press in which the news (if any) takes more time to extract from the accompanying self-compliment than many editorial departments can afford.

The Modern Book of Engineering. By W. H. McCormick. London: A. & C. Black Limited, 4/6, Soho Square, W.1. 10 in. × 7¼ in. 144 pp. 25 illustrations from photographs. Price 5s. net.—Though written "for popular consumption," this excellently illustrated and produced work contains a considerable amount of technical detail and is by no means merely a "book for boys." The scope of the text includes most of the major branches of civil and mechanical engineering, and among the works described are the building of a locomotive, the assembling of a mass-production motorcar, the construction of an ocean liner, great tunnels under both mountains and rivers, the Suez, Panama, Welland Ship and other canals, and all the principal types of bridges. Among the illustrations of railway import are: an L.M.S.R. 4-6-0 being lifted by overhead cranes, a "Royal Scot" under construction, an under-rail view of an L.N.E.R. 4-6-2 on the weighbridge at Doncaster, the Gotthard Railway spirals, near Giornico, construction views of the Simplon and Gotthard tunnels, and the Forth, Quebec and other bridges. The book is a clever blend of general information and simply-explained technical detail, and is, in fact, a mine of information, written in such a way as to be of interest to the engineer as well as to the general public.

Winter Sports.—The annual winter sports guide issued by Thos. Cook & Son Ltd., Berkeley Street, London, W.1, is, of course, devoted largely to Switzerland, and the facilities, attractions, and accommodation at all the Swiss centres are very fully described and illustrated. Austria, Italy, Germany, and the Scandinavian countries, and others further afield are also dealt with from the point of view of the winter sports enthusiast. There are many pages of useful general information calculated to inspire the novice with confidence, and to provide the more experienced visitor with the means of enjoying still more fully his next winter-sports holiday. There are various new and interesting features this season, which include the additional centres—Flims, Wengenalp, Eigergletscher—and also "off the beaten track" holidays in Czechoslovakia. A most useful innovation is the arrangement of novice and juvenile parties in connection with a special excursion train operated in connection with the Dover-Ostend route; the arrangements for this train are the subject of a special folder enclosed.

Holidays Overseas.—A guide booklet with a cheerfully designed cover has reached us from Dean & Dawson Limited, 7, Blandford Square, London, N.W.1. Entitled "Holidays Overseas;" it deals with tours in Africa, the Americas, Australasia, and the East. It may come as a surprise to many who choose as their holiday a voyage, say to the East or to the Antipodes, that for a comparatively small additional charge they can obtain a Round-the-World ticket and thus return by a different route. Those who wish to seek the summer in other lands will find the suggestions of this pleasant publication irresistible.

Metal Refining.—The development of sodium carbonate as a desulphurising agent for cast iron has been a special concern of Imperial Chemical Industries Limited, whose experience is summarised within the 55 pages of a well-produced and illustrated book entitled "Sodium Carbonate for Metal Refining." Although it covers the ground of previous I.C.I. publications on the subject, there is also much new matter, so arranged and presented as to interest alike the metallurgist and the foundry foreman. After a clear exposition of the theory of the sodium carbonate process there are sections on what sodium carbonate is, what it does, how it is used, and how it reduces foundry costs. The book also covers such subsidiary aspects of the process as its extension to non-ferrous metals and the effect of sodium carbonate on refractories. The versatility of sodium carbonate as a refining flux is emphasised in a section describing, with comparative tables and micro-photographs, not only how it reduces the sulphur content of cast iron, but also how it refines graphite, reduces porosity in castings, prevents sulphur segregation, and removes "kish" and non-metallic inclusions. The photographs clearly show the fine machined finish obtainable by the process. Practical details are given of the design and use of modern equipment for operating the process, whether for basic or other blast-furnace iron, refined pig iron, grey iron castings, or iron for converter steel castings. The sodium carbonate process has been brought to the fore recently by reason of its importance to one of the most revolutionary developments in ferrous metallurgy for many years—the Brassert acid-burden process for blast-furnaces, wherein the sulphur content of the iron is adjusted by sodium-carbonate treatment when the metal leaves the blast furnace.

THE SCRAP HEAP

It is stated to be an offence, on Roumanian Railways—punishable by a fine—to travel in a smoking compartment unless one is indulging in a pipe, cigar, or cigarette.

* * *

Polling booths are to be installed on long-distance trains on the day of the approaching elections to the supreme council of the U.S.S.R., according to a decision by the Central Executive Committee. Travellers on these trains holding "voting rights certificates" will thus be able to record their vote, states a Reuters message from Moscow.

* * *

Travellers on Canadian National trans-continental trains prefer breakfast to any other meal. The General Superintendent of Sleeping, Dining, and Parlour Cars states that 38 per cent. of the meals taken last summer were breakfasts, 27 per cent. were luncheons, and 35 per cent. dinners. Price does not account for the low percentage of luncheons, for the passengers may enjoy an excellently-served mid-day meal for about three shillings, but the fact is, that trans-continental travellers occasionally "skip" lunch. By the end of the year well over three-quarters of a million meals will have been served to patrons in Canadian National dining, café, or buffet cars during 1937.

* * *

AN EXECUTION SPECIAL

An excursion has been defined as "a trip for pleasure or health," but one would need a large stretch of imagination to include in that category a grim excursion special which was run on the North Midland Railway on March 31, 1843. On this date two special trains were run to Derby on the occasion of a triple execution. The condemned men were Samuel Bonsall, William Bland, and John Holmes; their victim was Martha Goddard of Stanley. It was computed that between 40,000 and 50,000 people were assembled at Derby to see the execution of the three men. Many came from districts 20 or 30 miles from Derby, walking the distance overnight or during the night. The two special trains were run from Belper, Ambergate, Wingfield, Chesterfield, &c. So great was the rush to get off by the first train that it was with difficulty that the carriage doors were closed. A disgraceful scene ensued, and fighting, wrestling, and swearing were universal.

* * *

It is said that no country has finer railways than Britain. A Frenchman who spent his holidays here last year is a champion of British railways, and particularly extols the Great Western. "Not only," he says, "are there separate compartments labelled 'Ladies' and 'Smoking,' but in some of the trains there are also some set apart for 'Reading' and 'Bath.'"—*From "The Best Railway Stories," published by the Richards Press Limited.*

* * *

A bus conductor had been told to make his reports more brief and concise, and after a slight accident his report read as follows: "Sir, I beg to report that there were two dogs in the road; one saw the bus coming, the other one never will."

One Hundred Years Ago

Extracts from the November, 1837, issue of "The Railway Magazine" (afterwards "Herapath's Railway Journal") and the oldest constituent of THE RAILWAY GAZETTE

German Railroads.—In consequence of one of those stupid under calculations which have done so much mischief in this country, the railway spirit in Germany has sunk considerably. The line from Dresden to Leipzic was estimated to cost 1,500,000 dollars, but it is now found it will cost near 4,500,000. This unpardonable, or we suppose wilful, error has stagnated the whole, and it is doubtful whether time itself will obliterate the mischief done.

Birmingham Railway.—This great line was opened to the public as far as Tring, thirty-one and three-quarter miles from town, on Monday, the 16th ult. An experimental trip was made under the direction of the London Secretary, Mr. Creed, on the previous Saturday with a large party. The distance was run in an hour. Tring is at the summit, and the whole distance is consequently uphill, at the average rise of about ten feet per mile. The speed, therefore, attained would be about forty miles an hour on a level. It seems that the times of reaching the station had been calculated and fixed theoretically; and what is very gratifying, we understand the practical performances corresponded with them exceedingly near. About the beginning of the year the line will be ready to Denbigh Hall, but it is likely not to be opened until completed to Wolverton, about fifty-one miles from town, which will probably be in March. When the line is once fairly opened great care will be taken to insure punctuality and prevent delays. The time-keepers at the stations will be regulated by London time, and under lock; a good chronometer will be furnished to each train; an engine at each station will always be ready, and despatched to meet any train not arriving within a quarter of an hour of its time. We presume, therefore, we shall be under no apprehensions of a night's lodging in the carriages from a restive or broken down steam-horse.

American Railways.—By a map, lately published by Poussin, of the American railroads, it appears there is now constructed and in the course of construction, one continued length of railway, with a few steam-boat interruptions, from Portland, New England, lat. 44° to Pensacola, West Florida, Gulf of Mexico, lat. 30½°, the total length of which cannot be less than from 1,300 to 1,400 miles, besides numberless branches sprouting out from it of 100, 200, 300, &c., miles each. Added to this are many long lines scattered over the country, chiefly from inland places to their immense rivers and lakes. So that if the Americans go on thus much longer, the whole face of the country will be covered with a trelliswork of railways.

Russian Railroad.—Five wersts of the Zarsko-Selo Railway were opened October 7. Twelve journeys were made a day, and 16,213 passengers carried in 5 days, increasing every day. The receipts of the 5 days were 21,255 rubles.

American Railway Expresses.—The rapidity with which the Government express was carried with the President's message to all the chief cities in the Union deserves a record. That to Philadelphia and New York is unparalleled, perhaps, in the history of the world. The express left Washington at twelve o'clock on Tuesday and reached Philadelphia (145 miles) at six, and New York (242 miles) at three minutes before eleven, thus performing the whole distance in ten hours and fifty-seven minutes! Seventy-four miles of railroad between Baltimore and Wilmington were travelled in 1 hr. 55 min.

Railroads in Belgium.—The line by which the Belgians propose to connect their western boundary looking on the sea, with their eastern bordering on Germany, is already so far advanced as to be opened from Tirlemont to Ghent on the 29th of September. When the whole line is completed, the journey by steam-packet and railway, between London and Brussels, will be effected in sixteen hours.

Prussian and Belgian Railway Junction.—It has been related to us as a curious fact, that the junction of the railways of these two nations is actually in a tunnel near Louvain, on the borders of the two countries. This looks droll. It is rather a darkish communion. We wonder whether the two nations are afraid or ashamed to look each other in the face, that they meet in a hole; or is it the best place, do they think, to play their "tricks upon travellers?"

OVERSEAS RAILWAY AFFAIRS

(From our special correspondents)

SOUTH AUSTRALIA

New Rolling Stock and Developments

The Government Railways construction programme—work upon which has already begun—includes the building of seven new " 620 " class passenger, and six " 720 " class goods locomotives, nine additional diesel engines for railcars, seven new all-steel coaches for the east-west Broken Hill express service, and ten coal hopper trucks of a new type. Designs are also being prepared for 24 steel corridor coaches for suburban and country services. The work of fitting automatic couplers to coaching and goods stock is being pushed ahead.

Improved facilities for the conveyance of perishables are being provided, and seven bogie refrigerator vans are under construction. A large number of narrow-gauge wagons are being rebuilt with increased capacity and Westinghouse brake equipment.

NEW SOUTH WALES

Selected Wages Employees Promoted to Salaried Staff

An important and far-reaching decision was recently made by the Government Railways administration to promote as many as 600 specially selected drivers, guards, signalmen, head shunters, electricians, clerks, and ticket examiners, from the wages to the salaried staff. This change carries with it substantial privileges, and should prove a powerful incentive to other employees to qualify for similar promotion.

The ever-growing attractions on the Government Railways are the special educational day excursions and cruises extending over from three to six days, which have been in force for some time now. They cater specially for students and enable them to see and appreciate the scenic beauties, and rural industries of the State. Recently they have included visits to coal mines, quarries, sheep-shearing sheds, woollen mills, some of the largest butter factories in the world, farms, orchards, plantations, waterworks, and irrigation undertakings. The Jenolan Caves, the Federal Capital, Canberra, and some of the inland towns have also been the objectives of these educational excursions and cruises, which, together with a variety of excursions for adults, have tended to create a healthy travel sense throughout the State.

The New Caves Express

Another very popular feature is the new Caves Express introduced last year, which runs through mountainous country between Sydney and Mount Victoria. It normally seats 240 first and second class passengers, but has frequently had to be run in two parts. The coaches are of the side-corridor type with extra wide windows, and buffet refreshments are provided. The colour scheme of the exterior is now blue and gold coaching stock with a green locomotive.

Livestock Traffic and Punctuality

As might be expected, special attention is paid by the Government Railways to cattle traffic. During the year ended June 30 last, over 12,600,000 head of stock were carried, and, thanks to the care and measures taken, less than two per thousand cattle, and less than four per thousand sheep arrived at their destinations dead or maimed. These measures include fast trains, second in speed only to passenger services, and new and improved vehicles; over 1,000 sheep vans were reconstructed during that year with self-cleaning floors and other improvements making for more sanitary conditions and freedom from injury to animals. The trains, some of which cover as many as 800 miles, are now running to a high standard of punctuality; during the twelve months ended June last, 95 per cent. arrived to time, and none of the remainder arrived so late as to cause consignments to miss the market, a most creditable record.

Referring to punctuality, it may also be noted that time-keeping on the North Coast line, and of the Sydney-Brisbane expresses in particular, has now reached a remarkably high standard. In the course of 200 journeys recently, this express was late on only 12 occasions during the height of the Christmas and excursion rush periods.

In this connection it is noteworthy that in spite of greatly increased speeds of late, locomotive reliability has steadily improved, as the following figures prove:—

Year ended June 30	Average miles run		
	Per engine per annum	Per engine casualty*	Per engine failure
1932	22,120	25,542	87,893
1933	23,927	30,900	96,189
1934	25,882	40,710	116,663
1935	27,745	45,193	169,319
1936	29,434	48,628	163,783
1937	30,322	56,536	198,080

The Sydney-Newcastle Train Service

Thanks to the use of 107-lb. rails welded into long lengths, the Newcastle main line has been strengthened for high-speed running, and since December last the time between the second and first cities of the State has been reduced by a Saturday morning train to 1 hr. 20 min. for the 104 miles of difficult line. This train is non-stop, but is followed by another with four intermediate stops that is allowed only 1 hr. 29 min. Other (business) expresses take 1 hr. 30 min., and the comfort of the modern rolling stock and punctuality are much appreciated by the public.

* An engine casualty is reckoned as occurring when delays of 5 min. are booked against the locomotive of an express, mail, passenger or mixed train, and of 10 min. in the case of livestock, goods, or mineral trains.

ARGENTINA

New State Railway Branch Opened

The new branch of the State Railways, 90 km. long, connecting El Milagro, in the Province of La Rioja, with Quines, in the Province of San Luís, was officially inaugurated on October 12, in the presence of the Governors of both Provinces and their respective Ministers.

Grain Elevator Expenditure in 1937

A Government Decree, countersigned by the Ministers of Finance and Agriculture, fixes the current year's expenditure on grain elevators at $20,187,000 paper. Of this sum $9,583,000 is allocated to terminal elevators; $4,104,000 to rural elevators (out of the total of $12,810,000 assigned to them), and $6,500,000 to expropriations. The total estimate of the Grain Elevator Board's expenditure is $51,980,000 paper. Terminal elevators are to be constructed at Buenos Aires (the New Port and Riachuelo), Quequen, Rosario (2), Villa Constitución, Ingeniero White, Santa Fé, Diamante, Concepción del Uruguay and La Plata. The rural installations comprise 20 elevators of 5,000 tons capacity each, and 20 of 3,000 tons each; the scheme includes 60 granaries of 650 tons, railway sidings and other works. It also provides for the expropriation of the elevator belonging to the American Rural Development Corporation at Rosario and 15 other units.

Engineering Lectures

At a meeting of the Buenos Aires Association of the Institution of Civil Engineers, held on September 23, Mr. H. W. Stevens, B.Sc., A.M.Inst.C.E., Buenos Ayres Great Southern Railway, read a paper on " The factors governing the production of concrete for engineering works," illustrated by stereopticon slides. Mr. J. H. Taylor, M.Inst.C.E., Central Argentine Railway, Vice-Chairman of the association, who presided, in proposing a vote of thanks to the lecturer at the conclusion, made some interesting historical references to the use of armoured concrete, which he traced back to the time of the Pharaohs; the order of the Egyptian taskmasters to their servants to make bricks without straw having reference, he said, to the custom of mixing some such material with clay to increase its strength.

At a meeting of the River Plate Branch of the Institution of Mechanical

Engineers, held on October 4, a paper on "Diesel Traction on Railways," to be read before the parent institution in London by Mr. G. K. Ambady, B.Sc. (Tech.), was discussed. Mr. W. C. R. Livesey, Chairman of the branch, presided, and the following took part in the discussion:—Major R. K. Hubbard, O.B.E., Messrs. D. S. Purdom, J. Campbell (by proxy), E. C. Noble, R. W. Walker, H. V. M. Fell, Savage, and McIntyre.

Public Train-Naming Competition

During the coming summer, the Central Argentine Railway is arranging to put an air-conditioned daylight express into service between Buenos Aires and Cordoba. For some time past, the company has followed the practice of naming its principal long-distance passenger trains, appreciating the fact that a named train is an advertising asset, the value of which is enhanced when the title expresses the characteristics of the train, or is associated in the public mind with the particular zone which it serves. On this occasion, the unusual course was followed of inviting the public to submit ideas, a prize of $300 being offered to the person sending in the name adopted by the railway. The results exceeded all expectations, evidence of the widespread interest shown in the innovation being afforded by the fact that 20,487 suggestions were received, comprising over 7,000 different names. A jury of railway officials was then entrusted with the selection of a suitable name from amongst those submitted, that finally chosen being El Cordobés. As this title had been sent in by 193 persons, a draw was necessary, in order to decide the winner of the award.

New Southern Air Service

A new passenger and mail air service between Buenos Aires and Rio Grande (Tierra del Fuego) was officially inaugurated on October 14. The service, operated by the Aereoposta Argentina Company, is an extension to Buenos Aires of the existing air line between Bahia Blanca and Comodoro Rivadavia (the site of the national oilfields) which has been in operation since 1929, and which was extended to Rio Gallegos in 1930 and to Rio Grande in 1935. The service is a bi-weekly one, leaving Quilmes (a suburb of Buenos Aires served by the B.A.G.S.R.) on Thursdays at 7 a.m., and reaching Comodoro Rivadavia at 3.06 p.m., the distance between these two points being 1,012 miles. The return journey is made on Fridays, leaving Comodoro Rivadavia at 7 a.m., and arriving at Buenos Aires (Quilmes) at 3.06 p.m. On Sundays, the hour of departure from Buenos Aires is 5 a.m., arriving at Rio Gallegos (a distance of 1,525 miles) at 6.06 p.m., continuing the journey to Rio Grande (a further 175 miles) on the Monday, and returning to Rio Gallegos the same day. The return journey to Buenos Aires is made on Tuesdays, leaving Rio Gallegos at 5 a.m., and arriving at Quilmes aerodrome at 6.06 p.m. Stops are made in both directions at Bahia Blanca, San Antonio Oeste, Trelew, Comodoro Rivadavia, Puerto Deseado, San Julian and Santa Cruz. The machines used are of the Junkers all-metal type, with accommodation for 17 passengers, and a maximum speed of 230 km.p.h. On the inaugural trip an average speed of 221 km.p.h. was registered, the time for the trip from Buenos Aires to Comodoro Rivadavia being 6 hr. 41 min.

BURMA

Final Report on the Breaches

In continuation of the description, published in THE RAILWAY GAZETTE of September 10, of the very extensive breaches on the Mandalay and Moulmein lines, the following further information is embodied in the Chief Railway Commissioner's report to the Government of Burma on this subject.

The estimated loss of gross revenue earnings due to the cessation or curtailment of traffic caused by the breaches is Rs. 3 lakhs (£22,500) and the cost of restoration of the lines is about Rs. 5½ lakhs (£41,250). The main line to Mandalay and the Pegu—Moulmein line were both completely closed to traffic for 17½ days, and most of 50-mile damaged length of the former has been re-opened only as a single instead of a double line.

Some Details of the Repair Work

In many places the track was swept off the bank by the water to a distance of 30 ft. away, and in consequence of this and the removal of support for long lengths, many rails were crippled and rendered useless. The telegraph lines were also broken in places and the loss of this means of communication was a severe handicap.

By the vigilance of the subordinate permanent way staff, no injuries to passengers or damage to trains took place.

Notwithstanding the great assistance obtained locally in bringing some of the materials back to the banks from which they had been swept away, the major portion of the materials for repairs had to be brought by engineering trains and some 36 lakhs of cu. ft. (133,000 cu. yd.) were required or about 300 train loads.

Single-line Working

Due to the cascading effect of the water on the downstream side, the down main line was much more seriously damaged than the up, and consequently every effort was concentrated upon restoring the latter—except at one bridge, No. 168, where the up line side was very seriously damaged and had not been repaired when the report was issued—as soon as possible. With this end in view, all main line stations affected, were redesigned and altered where necessary as single-line crossing stations to take the longest goods trains. The signalling and interlocking at all these stations had to be modified to permit the use of the signals for single line working. Single-line working was restored on August 16—as was the Moulmein line traffic—and on September 6 certain sections of double line were reopened.

Special arrangements were necessary at Penwegon station to cover the necessary single line working over Bridge 168. Its effect on traffic delays was reduced by bringing this bridge within the station yard limits and suitably re-designing the layout and interlocking. The total labour employed between July 30 and September 15 was approximately 88,000 men-days, of which 46,000 were Burman and 24,000 were Indian. Besides these, technical labour from permanent way gangs was transferred from other districts. This amounted to some 18,000 men-days.

CEYLON

Reduced Fares, Road Traffic Control and the Closing of Railways

Reduced passenger fares have now come into force on the Government Railway, necessitating the printing of 500,000 new tickets initially.

Mr. L. T. Stott, Deputy General Manager, addressing the Nuwera Eliya District Planters Association recently, assured his audience that there need be no fear of an immediate closing down of the Udapussellawa line. He also expressed the sentiment that it would be unfair to the residents of the island, and, in particular, to those who had been loyal to the railway, to take away suddenly a means of transport on which they had come to rely. The principal cause of the railway deficit was road competition, and, until the State Council had approved the Bill now being drafted to control and limit road transport, it was considered unwise to take any steps towards closing railways, until it could be seen what was the reaction of traffic on such lines to the control placed upon the roads. Even in cases where it was decided to close a line, due notice would be given, and an alternative form of transport would be decided upon before actual closing down took place. Government would give most careful consideration to this question in planting areas, said Mr. Stott, as the planters had always wholeheartedly supported the railway.

Schemes to Attract More Traffic

Every effort is being made by the Government to popularise those lines which the Hammond Commission recommended should be closed as unremunerative, and in addition to the reduction in fares, goods rates are also to be lowered on these sections of railway; these freight reductions will, however, apply only to goods flowing into Colombo. A simplification of goods tariffs is also to be tried. In place of the former 13 classes of goods a flat rate of 8 cents a ton-mile is to be charged, as it is upon a flat rate that the lorry competition is thriving.

NEW L.M.S. HOTEL AT LEEDS

In addition to over 200 bedrooms, all with baths, by the provision of a Banqueting Hall, Grill Room, French Restaurant, American Bar, Brasserie, and five suites for private functions, the L.M.S.R. continues its policy of making its hotels the business and social centres of the great cities it serves

(*See illustrations on pages* 889 *and* 890)

AN outstanding event in the history of the British hotels industry was the opening last week by the the Earl of Harewood, accompanied by H.R.H. the Princess Royal, of the L.M.S. Railway's new Queen's Hotel, Leeds. Embodying many innovations and refinements which entitle it to rank as one of the finest hotels in the world, the new Queen's Hotel represents an important addition to the social and industrial life of the North of England. It constitutes also a dignified and worthy contribution to the architectural features of the famous Leeds City Square.

Although the hotel is in every respect an entirely new building—to whose construction and equipment hoteliers, architects, engineers, and research experts have all contributed the very latest ideas in their respective spheres—its name and goodwill are institutions of long standing in Leeds. In effect, the former Queen's Hotel (a portion of which has remained open throughout the erection of its successor) has been replaced by a new building which will fulfil in Leeds the same social status, and will maintain the same prestige, as are the perquisites in Liverpool and Manchester of the L.M.S.R. Adelphi and Midland Hotels respectively.

In planning this great new hotel, Mr. Arthur Towle, Controller of L.M.S. Hotel Services, in collaboration with the associated architects (Messrs. W. Curtis Green, R.A., and William H. Hamlyn, F.R.I.B.A., the latter the L.M.S.R. Chief Architect), have preserved the essentials of unostentatious but attractive luxury, maximum service efficiency, and imposing but dignified exterior simplicity.

The Station Improvements

The hotel building forms the first part to be completed of an extensive scheme for improving railway amenities in Leeds. The remainder of the programme, part of which is being carried out in conjunction with the London & North Eastern Railway, comprises the partial reconstruction of Leeds (Wellington) and Leeds (New) stations, including a new concourse, booking and parcels offices, &c. The scheme will enable the two stations to be worked jointly. In addition, there is now being erected alongside the new Queen's Hotel a large modern office building, wherein will be housed approximately 400 of the L.M.S.R. staff in Leeds. In addition to being the headquarters of the Leeds District Passenger Manager, the building will accommodate other offices, while part of the basement and sub-basement will be occupied by a news cinema seating 270 people.

The frontage of the Queen's Hotel on to City Square is 230 ft., while the eighth (top) floor has a maximum height of 115 ft. above pavement level. While the façade (which includes 12,000 cu. ft. of Portland stone) exhibits dignity and restraint, its design essentially reflects the character of a modern hotel. On one side the hotel is flanked by the new office building previously mentioned, and on the other by a rubber-paved approach-road to the hotel banqueting suite and to the station concourse. There is also, direct access to the stations from the hotel itself. Columns supporting bedroom floors of the hotel which project over the station approach-road, are carved with designs symbolic of the towns served by the L.M.S.R.

Sound-Resisting Equipment and Regulated Ventilation

Among the many novel features of the new hotel are the special methods adopted to eliminate extraneous noise and to regulate ventilation. The lift-motors are situated in a tower 130 ft. above street level, thus preventing their working from interfering with the comfort of guests in the bedrooms or public rooms.

As the result of sound readings taken by railway research engineers, it was ascertained that if double windows were installed in the rooms on the first and second floors of the hotel, street noises could be eliminated entirely. In this connection, the Leeds Corporation has removed the tram lines in front of the hotel a distance of 30 ft. away from the line of frontage, and has put in specially insulated manganese steel rails at all crossing places adjacent to the new building. This is a notable anti-noise achievement, since no fewer than four sets of tram lines and seven roads converge at the junction of the City Square where the new Queen's Hotel is situated. When the double windows are closed it is possible to see the tramcars pass by and yet not hear them.

Anti-noise principles have also been carefully observed in planning the layout of the bedrooms and public rooms. Each bedroom is divided from the adjoining one by a double partition of specially constructed acoustic slabs. The ceilings of the bedrooms are actually suspended from the constructional floors and insulated, thus preventing the transmission of noise from ceiling to floor. The floors are of the " aerodrome " anti-noise type.

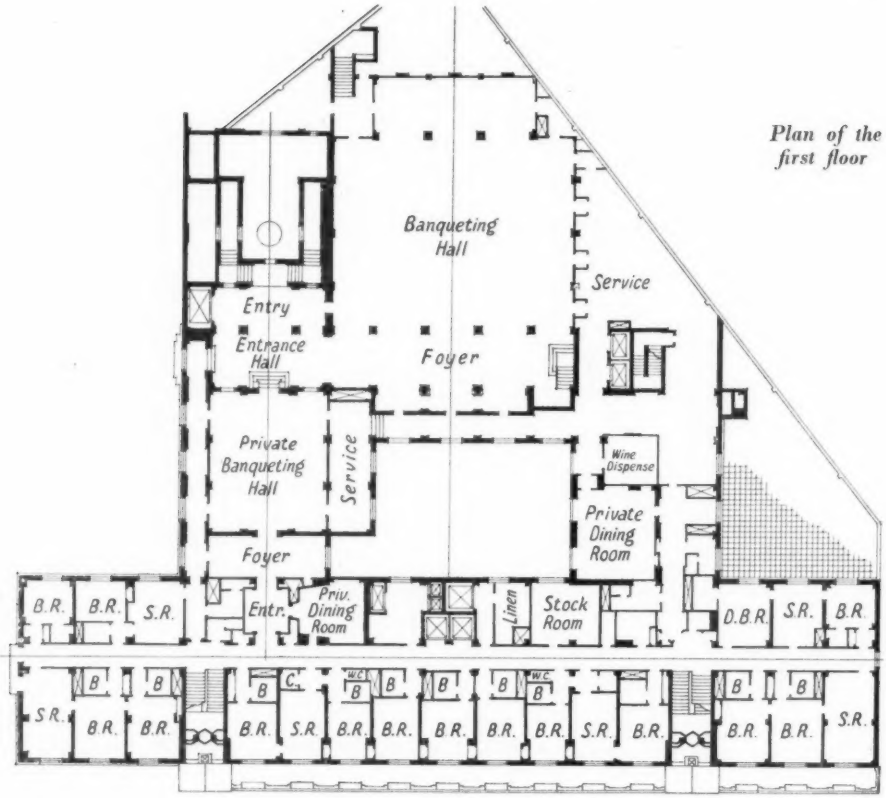
The two banqueting halls, accommodating respectively 400 and 100 persons, have been similarly treated acoustically to provide a perfect atmosphere for public speaking and musical entertainment.

The new Queen's is also the first hotel in this country to be planned and built with a completely regulated ventilation system, circulating 8,000,000 cu. ft. of air an hour throughout the building. This system enables the bedrooms and the public rooms to be constantly supplied with freshly washed air and is a sequel to a visit to the United States of the company's architect and engineers where they were given facilities for examining the latest systems prevailing over there.

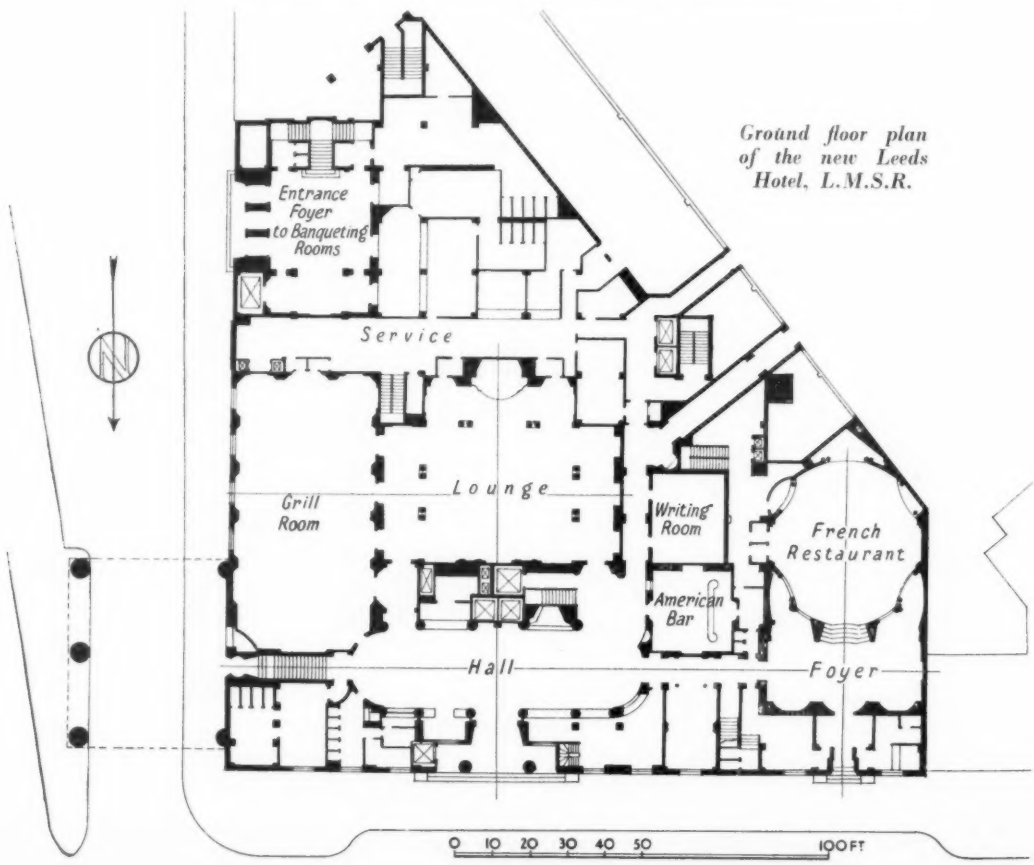
Other Amenities of the Hotel

Every bedroom—and there are over 200—has been so planned that not a single one is overlooked by another, while each bedroom also has its own private bath or bath lobby; thus there is not a single " public " bathroom in the hotel.

Another novel feature is the telephone service in the



Plan of the first floor



Ground floor plan of the new Leeds Hotel, L.M.S.R.

bedrooms. Each bedroom has its own 'phone, and for the first time in this country each 'phone is fitted with a cut-out device which enables the caller to communicate with the exchange operator, without disconnecting the line on which the conversation is taking place.

Covering the entire site of the building, the basement accommodates a brasserie, kitchens, larders, vegetable store, cellarage, luggage store, &c., together with a large linen room to which soiled linen is shot down a chute from each of the eight floors.

The sub-basement, 30 ft. below street level, houses 11 boilers for heating the hotel and office building (the boilers are fed with coke by means of a belt conveyor leading from the bunkers), the ventilating plant which circulates 8,000,000 cu. ft. an hour, the vacuum-cleaning plant and the main electric switch-room. There is also a fully equipped printing-shop for the production of menus and other printed matter used in the hotel.

Part of the foundations of the hotel rest in concrete set in the bed of an old goyt or tunnel which was formerly used to convey water from the River Aire to some mills nearby. Disused and dried-up for many years, this old tunnel with its heavy arched stone roof, 150 yd. long, presented a difficult problem to the engineers. The river end of the old goyt has now been filled up with concrete, while part of the goyt is occupied by the hotel boilers.

Floor Arrangement

The arrangement of the floors (apart from the basement and sub-basement already mentioned) is as follows:—

Ground Floor.—Pillared reception hall. 78 ft. by 20 ft.
Grill room (170 people).
Lounge (250 people).
French restaurant (75 people) and foyer.
American bar.
Ladies' foyer.
Courier's dining room.
Ladies' boudoir.
Ladies' and gentlemen's hairdressing.
Manager and offices.
Telephone exchange.

First Floor.—Entrance and foyer to the banqueting hall (accommodating 400 diners or 700 dancers).
Private banqueting room and suite of four private dining-rooms.

The remaining upper floors are given over to bedroom and bathroom accommodation, except for the top (eighth) floor, which is entirely devoted to staff quarters for those who sleep in. The staff of the hotel totals 300.

A Who's Who of the New Queen's Hotel

Arthur Towle	Controller, L.M.S. Hotel Services.
William H. Hamlyn, F.R.I.B.A.	Chief Architect, L.M.S.R.
W. Curtis Green, R.A. ..	Associated Architect.
B. L. Hurst, M.Inst.C.E., M.I. Struct.E., M.I.Mech.E. ..	Consultant Civil Engineers.
J. Norman Pierce, M.Inst.C.E., M.I.Struct.E.	Consultant Civil Engineers.
Oscar Faber, O.B.E., D.Sc., M.Inst.C.E.	Engineer for Heating, Ventilating, Water, and related services
G. W. Harris	Clerk of Works for L.M.S.R.
Wm. Airey & Son (Leeds) Ltd.	General Contractors.

Opening Ceremony

On the occasion of the formal opening of the new Queen's Hotel, Leeds, on Friday last by the Rt. Hon. the Earl of Harewood, K.G., the London Midland & Scottish Railway Company invited a number of guests representative of the civic, professional, and business life of Leeds and surrounding districts to witness the opening ceremony, and afterwards to luncheon.

In addition to Sir Josiah Stamp, Chairman of the Company and President of the Executive Committee, and Mr. A. E. Towle, Controller of L.M.S. Hotel Services, Directors and Officers of the London Midland & Scottish Railway present included:—

Mr. Edward B. Fielden, Deputy Chairman; Mr. W. L. Hichens, Sir Francis Joseph, Earl Peel, Mr. A. E. Pullar, Mr. G. R. T. Taylor; Sir Robert Bruce, Sir Robert Greig, Mr. J. H. Houldsworth, and Col Norman Kennedy (Members of the Scottish Committee); Sir William V. Wood, Vice-President; Mr. O. Glynne Roberts, Secretary of the Company and Assistant to President, Mr. H. V. Mosley, Chief Executive Officer for New Works and Parliamentary Business; Mr. J. Ballantyne, Chief Officer for Scotland; Mr. A. F. Bound, Signal and Telegraph Engineer; Mr. W. H. C. Clay, Estate Manager; Mr. W. A. Stanier, Chief Mechanical Engineer; Mr. C. E. Fairburn, Deputy Chief Mechanical Engineer and Electrical Engineer; Mr. G. Morton, Chief Accountant; Mr. S. J. Symes, Chief Stores Superintendent; Mr. W. K. Wallace, Chief Civil Engineer; Mr. W. H. Hamlyn, Assistant (Architectural), Chief Civil Engineer's Department (Associated Architect for Hotel); Mr. H. Rudgard, Divisional Superintendent of Operation; Mr. Geoffrey A. Towle, Controller's Assistant, Hotel Services; Miss P. M. Oxenford, Officer for Domestic Services and Furnishing, Hotel Services; Mr. E. W. Jones, Engineer, Hotel Services; Mr. Gordon Yates, Publicity Officer, Hotel Services; Mr. J. E. Papworth, District Goods Manager, Leeds; Mr. H. A. Hooks, District Passenger Manager, Leeds; Mr. G. Rogers, District Controller, Leeds; Miss E. Smith, Secretary to Sir Josiah Stamp; Mr. D. F. Winch and Mr. T. H. Baker, Assistants to the Secretary; Mr. W. C. Brudernell, Publicity Officer's Department.

London & North Eastern Railway Directors and Officers present included:—

Sir Chas. A. Batho and The Hon. Rupert Beckett; Mr. C. M. Jenkin Jones, Divisional General Manager, North Eastern Area; Mr. S. T. Burgoyne, Superintendent, North Eastern Area; Mr. J. E. Ryan, Hotels Superintendent, Southern Area; Mr. A. A. Ryan, Hotels Superintendent, North Eastern Area; Mr. E. M. Rutter, Passenger Manager, North Eastern Area; and Mr. M. A. Cameron, District Passenger Manager, Leeds.

The three railway unions were represented by:—

Mr. W. J. R. Squance, General Secretary, Associated Society of Locomotive Engineers and Firemen; Mr. J. Marchbank, General Secretary of the National Union of Railwaymen; Mr. W. Stott, General Secretary of the Railway Clerks' Association.

On Friday morning the Princess Royal attended by her Lady-in-Waiting, Miss Dorothy Yorke, left Edinburgh by special train for Leeds, where on the previous day, she had attended the armistice commemoration in Edinburgh. Others journeying by the special train were a number of members of the Scottish Committee of the L.M.S.R. and Mr. J. Ballantyne, Chief Officer for Scotland. The Princess Royal was met on arrival at Leeds by Lord Harewood, and also by Mr. Geoffrey Towle, Controller's Assistant, and Mr. Charles Pittolo, Resident Manager.

Shortly before the train arrived in Leeds, the L.M.S. reception party who had travelled from London by special train assembled in the new Queen's Hotel.

On arrival at the main entrance to the Hotel, H.R.H. the Princess Royal and Lord Harewood were received by Sir Josiah Stamp and Lady Stamp, the Lord Mayor and Lady Mayoress of Leeds, Mr. E. B. Fielden, Deputy Chairman, and Mrs. Fielden, Mr. W. L. Hichens, Chairman of the Hotels Committee, L.M.S.R., and Mrs. Hichens, Mr. A. E. Towle, Controller, L.M.S. Hotel Services, and Mrs. Towle.

Sir Josiah Stamp presented Lord Harewood with a silver symbolic key with which to open the door of the hotel. This ceremony performed, the Princess Royal, Lord Harewood, Miss Dorothy Yorke, and the Reception Committee entered the hotel and were received with acclamation by the guests assembled in the entrance hall.

The Princess Royal was presented with a bouquet by Miss Elizabeth Stamp, granddaughter of Sir Josiah Stamp.

The Princess Royal, Lord Harewood, and Miss Dorothy Yorke, then signed the register, and the royal party was

conducted over the hotel by Sir Josiah and Lady Stamp and Mr. and Mrs. Arthur Towle. On entering the banqueting hall the guests were received individually by Sir Josiah and Lady Stamp.

The Luncheon

Before the luncheon a special Grace was said by the Vicar of Leeds (Canon W. Thompson Elliott), reading:—

Peace be to this house and to all who shall dwell herein. God bless the management and the staff, the hosts and the guests. May the fair name of this house remain forever unsullied. Thank God for the finished work, the food and fellowship of this day, and may He teach us ever to remember the needs of others.

After luncheon the loyal toasts were proposed by Sir Josiah Stamp.

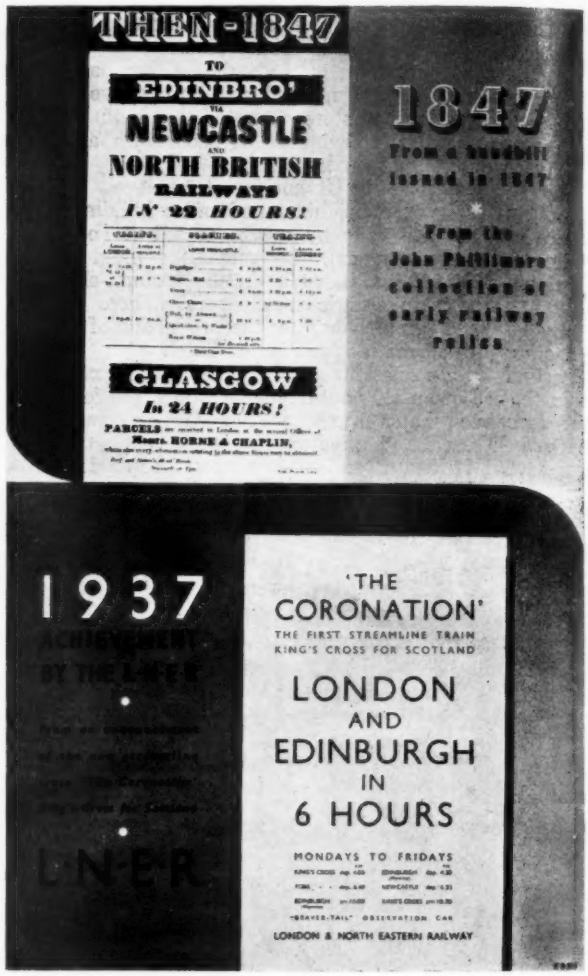
Lord Harewood in proposing "Success to the New Hotel" said he did so with the greatest pleasure. He felt that those who had an affection for the City of Leeds would have only one complaint to make with regard to it, and that was that Leeds had not been provided with a hotel of this quality years ago, and he hoped that the city would live up to the standard which was going to be set by it. After paying a tribute to the hospitality he had received in other L.M.S. hotels, he said it was quite evident from what he had seen on his tour of inspection that the new Queen's Hotel was one of the most up-to-date and comfortable hotels that existed in the country or in the world. He had been particularly impressed by the sound-proof rooms. One of the great problems of today was that of noise. The noiseless rooms of the new hotel would meet the requirements of business men tired after the atmosphere of factory and offices, and there was much to commend in the quiet dignity of the decoration of the hotel. He was not sure that the prosperity of Leeds had ever depended on its beauty, but after all we had been taught from our earliest youth that it is better to be good than beautiful, and he felt that what he had already seen of the hotel at least qualified it to count among those that were good. There was a great beauty in being quiet and sober.

Mr. A. E. Towle in responding said that his first visit to the old Queen's Hotel, Leeds, was when he was six weeks old. At the time he was born the old hotel was under the control of his father, and it had been under the control of the Towle family ever since. The new hotel was the consummation of what he personally hoped for twenty years ago. They had a new hotel, but their task from the management side was only just beginning. This hotel would be the social centre for a large area. If this new toy did not work in perfect rhythm at the beginning he would ask the people of Leeds to have patience. In a short time he hoped the new toy would move in perfect rhythm and meet every desire of the populace.

Sir Josiah Stamp proposed the toast of "Our Guests" and revealed the interesting fact that he secured Lord Harewood's promise to open the hotel when he discovered him after the Royal Academy banquet, looking at the designs of Mr. Green for the hotel, on view at the Academy. The time seemed opportune. After a few words of preliminary conversation, he asked Lord Harewood if he would open the new hotel. Without delay he assented and he was grateful to him. Continuing Sir Josiah said it was soon after he first joined the L.M.S.R. Company, that he first approached the Leeds civic authorities regarding a new hotel.

The Lord Mayor in responding praised the L.M.S. Railway Company for its foresight and said he wished the time might come when the beauty and enjoyment of the hotel might be possessed by all the citizens.

London to Edinburgh—Then and Now



A double-royal poster issued by the L.N.E.R. which embodies a reproduction of a handbill issued in 1847 announcing a service from London to Edinburgh by train and coach in 22 hours. Below this handbill is reproduced a current announcement advertising the Coronation L.N.E.R. streamlined train from London to Edinburgh in six hours. The old handbill is from the famous collection of Mr. John Phillimore

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GERMAN HIGH-SPEED RAILCARS BACK IN SERVICE.—The fast railcar services which, as recorded in THE RAILWAY GAZETTE of October 29, had been temporarily withdrawn, were resumed on November 6 between Berlin and Cologne, and next day between Berlin, Munich, and Stuttgart. The remaining services will follow shortly. The temporary suspension of these services was necessitated by the observance of signs of too early fatigue in some of the carrying axles, which, owing to the high speeds and long continuous runs of these vehicles are subject to continuous stresses apparently affecting the tensile characteristics of the metal to such a degree that a shorter life must be reckoned for their axles than for those in other vehicles. Although a careful examination was made in the short time the vehicles were withdrawn it did not suffice to enable a definite life to be fixed for these axles; they were therefore renewed.

RAILWAYS AND ROAD TRANSPORT SECTION

This section appears at four-weekly intervals

The Earls Court Show

ALTHOUGH the fact that the recent Commercial Motor Transport Exhibition was the first of the series to be held in the new buildings at Earls Court probably accounted for a certain amount of additional popular interest, there is no doubt that the increasing importance of road transport was the main factor resulting in an attendance during the nine days of the show of no fewer than 68,547 persons compared with 64,203 at the previous exhibition, which was held at Olympia in 1935. This year the entire display occupied an area in excess of 240,000 sq. ft. which is 50,000 sq. ft. more than previously, and as a result not only was a wider range of vehicles and products assembled than before, but also the arrangement of the new premises enabled more definite locations to be assigned to the various sections, and permitted a better display and greater accessibility.

The tremendous growth of the road transport industry was well shown by a few figures which were quoted by Mr. A. F. Palmer Phillips of the Society of Motor Manufacturers and Traders at the luncheon on Thursday of last week after the conference of the Railway Companies' Association. He said that at the time of the first Commercial Motor Exhibition, which was held at the Crystal Palace in 1903, there were 4,000 vehicles on the roads. Today, 400 exhibitors had taken part in the exhibition and there were 590,000 commercial motors in service. Vehicles were better and safer to drive than they had ever been, and prices were up only 5 per cent. Rapid strides, he said, had been made technically and also in the painting and appearance of the vehicles. So far as appearance was concerned, we were particularly impressed with the return to neat and sober liveries as compared with the cheap catch-penny "streamline" painting that was so greatly in evidence in 1935. To some extent this may be accounted for by the more adequate representation among the exhibits of vehicles in railway livery and in that of railway-associated undertakings, for the more startling finishes have tended to prove attractive rather to the small operator than to the large established companies.

Mr. Palmer Phillips spoke of the difficulties which the road transport industry had experienced in recent years, and remarked that during the past quarter of a century there had been an increase of only 1½ per cent. in road development. At the time of the 1931 exhibition trade was not good and in 1933 the uncertainty as to the effect of the Road and Rail Traffic Act overshadowed everything else, but by 1935 it had been shown that the effects of that Act were not so bad as had been expected. At the present time he thought there was a changed outlook and felt sure that the Transport Advisory Committee's Report would lead to co-ordination without coercion. No attempt was to be made to direct the channel by which goods should be moved. He thought that voluntary co-ordination had great possibilities and welcomed the offer of the railway companies to discuss mutual problems.

Sir Nigel Gresley was the chief spokesman for the railway companies. In thanking the Society of Motor Manufacturers and Traders for its hospitality he said that the railway companies were very large users of motor vehicles, owning between them some 9,000 units, of which his own company (the L.N.E.R.) owned 3,000. Since the last exhibition, in 1935, upwards of £1,000,000 worth of motors had been purchased. He emphasised that the railways would like to reduce to nil the number of horses if they could acquire a suitable vehicle, and reiterated what has often been said on behalf of the railways, namely, that the desideratum was a cheap light vehicle to replace the single-horse van. Conferences had been held with the motor manufacturers pointing out the requirements of the railway companies, but the results had been disappointing; he thought that a two-cylinder air-cooled engine of a cheap type would be most acceptable. In this connection we would refer to the optimistic note on which Mr. H. W. Faircloth, Assistant (Cartage Working) to the Chief Operating Manager, L.M.S.R., wound up his interesting paper which we reproduce on a later page. He referred to a new type of vehicle that the railway companies will be testing shortly and which hold out the promise of marking a distinct step forward in the efforts to reduce the gap between the motor cost and horse cost on the short-mileage work frequently occasioned by railway cartage operations. Should this prove successful, the displacement of a fairly substantial number of horses may be expected, but complete conversion in the near future without artificial stimulus is extremely unlikely.

Sir Nigel was able to conclude his remarks with a deserved tribute from the railways to the road when he said that railways had learned much from the motor industry. The streamlining of trains came from the streamlining of cars; bucket type seats and tourist trains were introduced with such success that further carriages were being built; and people thus imagined they were travelling in buses. Railcars also were evolved from motor vehicles, and so was the idea of painting trains in distinctive colours. He would be very glad to think that the motor industry had also learned lessons from the railways.

Mechanising Railway Cartage

FOR some years past it has been customary for the Railway Companies' Association to arrange a conference during the course of the Commercial Motor Transport Exhibition at which a paper is presented by a railway road-transport officer. The papers which have been read at this function on previous occasions have been devoted in the main to an endeavour to impress upon the motor manufacturers of this country the view of the railway companies that they, the motor manufacturers, have been concentrating upon the production of motor vehicles which, whilst eminently suitable for a certain proportion of the commercial road work of this country, are not the most suitable for railway work, which to a large degree consists

of very short hauls involving a large number of calls at traders' premises *en route*. The technical implications of this proposition have been covered very fully by Messrs. Shearman and Coventry at the last two meetings, and again at the special meeting which was held between the Commercial Vehicle Technical Committee of the S.M.M.T. and the representatives of the Railway Companies Association in December, 1935. The paper presented on Thursday of last week by Mr. H. W. Faircloth, Assistant (Cartage Working) to the Chief Operating Manager, L.M.S.R., was concerned with the same problem, which is, indeed, the fundamental difficulty the railways have to face in considering any further mechanisation of cartage services. He gave a brief *résumé* of the progress of mechanisation of railway cartage equipment; some details of the nature of the work carried on by the companies' cartage organisations; the factors to which consideration has to be given when mechanising; and the position in regard to the future. On the last-named point he declined, very wisely, to " don the mantle of Elijah " and give any precise forecast of the probable extent of railway mechanisation in the near future. This was inevitable, as his whole paper constituted a convincing exposition of the fact that further conversion of railway cartage operations from horse to mechanical transport depended very largely upon the production of a vehicle whose working cost would approximate closely to that of a horse unit. In that connection he stated that since the meeting held with the Commercial Vehicle Technical Committee of the S.M.M.T. in 1935, several firms had been applying themselves to the problem. So far only one vehicle had materialised which held out any promise of meeting railway requirements to any material degree, and this the railway companies would be testing shortly. Without in any way pre-judging the results of these tests and the various experiments which will be carried out, Mr. Faircloth was able to express the opinion that whilst the vehicle will mark a distinct step forward, the working costs will still be such as will not enable complete substitution to be effected. There is every hope, however, that this new vehicle will make a marked reduction in the gap between motor cost and horse cost on short mileage work, and should result in the displacement of a fairly substantial number of horses.

Cartage of Transhipment Traffic Across London

A CONSIDERABLE amount of freight train traffic requires to be exchanged with the least possible delay between the four main-line railway companies in London, and, apart from the tonnage regularly transferred by rail, something like 1,000 tons is conveyed daily by road between the respective railway termini. For many years it has been the practice of every company to deal with this traffic in those of its vehicles that became available during the course of the collection and delivery operations, and a certain amount of light loading and light mileage was unavoidable.

After a number of experiments with modern equipment in 1935, however, a scheme was evolved for the co-ordination of the road movement of the cross-London merchandise traffic by the introduction of a fleet of six-ton articulated Scammell tractors together with a number of trailers which were specially allocated for the work. The L.M.S.R., L.N.E.R., and G.W.R. companies provided eight tractors each and the Southern Railway six, together with a substantially larger number of trailers. Eight scheduled routes between the various London goods termini were introduced initially and these were steadily increased in the light of experience until there are now thirty routes scheduled, on all of which services are worked to a strict timetable throughout the day.

The vehicles carry substantially heavier loads in each direction than was previously posssible, and while every company operates its own tractors, the trailers are, in effect, pooled. Thus G.W.R. tractors may frequently be seen hauling L.M.S.R., L.N.E.R., or S.R. trailers, and similarly in the case of the other companies. The bulk of the traffic in question is now being dealt with by this means, and the arrangements are steadily being extended to cover the balance of the traffic as the necessary equipment becomes available. The scheme is working very satisfactorily and, in addition to enabling the companies to effect substantial economies in their cartage costs and the elimination of light mileage, has also materially speeded up transits.

Tilling of Crewe House

ON October 25 Thomas Tilling Limited and some of its associated companies formally took up occupation of the new headquarters at Crewe House, Curzon Street, Mayfair, W.1, which have replaced 20, Victoria Street as the chief offices of the group. Tillings Association is now at Crewe House, and also the National Omnibus & Transport Co. Ltd.; the registered office of the latter is given as 15, Curzon Street—part of the same premises. This mansion, formerly called Wharncliffe House, is freehold and has a frontage of 130 ft. to Curzon Street and a site area of 29,500 sq. ft. It faces Sunderland House, but is well recessed from the roadway. The house has a stucco front of the eighteenth-century type, and, except for the central portion, is what agents call " a low-built " house —that is, of only two principal floors. The central part of the elevation is enriched with classic columns in relief, and the ground-floor windows, on the garden front, are semi-circular at the top and symmetrically placed, the whole structure exhibiting that punctilious regard for an exact balance so characteristic of the period when Crewe house was built, namely, the early years of the eighteenth century.

In 1901, Mr. Joseph Stower (of Messrs. Joseph Stower, Bentley & Co.) refused a bid of £95,000 when acting for the late Lord Wharncliffe's trustees, and the property was afterwards sold to Lord Crewe, from whom it takes its present name. Crewe House came under the hammer of Messrs. Farebrother, Ellis, Egerton, Breach & Co. at the Tokenhouse Yard Mart in 1908, by order of Lord Crewe, and it was bought in at £100,000 after a suggestion that the value was £120,000. It was announced in March last that Thomas Tilling Limited had agreed to acquire Crewe House from Lord Crewe, and in the intervening months the interior of the mansion has been adapted for use as the offices of the company, but no fundamental alteration of the building has been made. The famous ballroom has been converted into the board room, and the Adam ceilings and marble mantelpieces have been preserved in their original beauty.

Catering Facilities for London Busmen

CONTINUING the good work begun by certain of its constituent undertakings, the London Passenger Transport Board provides a large number of catering facilities designed to secure for as many employees as possible the opportunity of obtaining wholesome meals and refreshments at reasonable prices. There are now 560 mess rooms and 81 fully-staffed canteens, of which 13 are open all night. During the year to June 30 last, which is reviewed in the recently-issued annual accounts of London Transport, eight new canteens have been opened, and five existing ones have been reconstructed. On page 888 we reproduce a photograph showing the attractively-arranged

counter of the canteen in Bromley garage, which is typical of the modern facilities afforded. So far as bus and tram men are concerned, there are considerable difficulties in arranging for adequate refreshment rooms at terminal points, and to meet specially awkward cases London Transport has had recourse to the provision of mobile canteens, which are old-type buses converted to this use. An interior view appears on page 888. In the report of the Court of Inquiry concerning the Central Bus strike of May last, the Court expressed the view that "where suitable provision of accommodation cannot otherwise be made, we think that the co-operation of the local authorities concerned should be given to secure the appointment of terminals at which refreshment facilities are available." The London Passenger Transport Board has stated that it wishes to enlist the co-operation of the local authorities in dealing with this problem. Meanwhile it is taking all reasonable steps to secure the desired object.

Bus Services of the New Zealand Railways

SUCCESS continues to mark the New Zealand Railway Department's operation of its passenger road services, and they showed a net profit of £21,698 in the year ended on March 31 last, in addition to £5,358 set aside as a special reserve. The profit would have been greater had it not been for the infantile paralysis epidemic in the Dunedin area. The vehicle-mileage run by the road services for the year was 3,531,600 miles, and 4,556,000 passengers were carried; the total revenue amounted to £198,751. For the current financial year the net earnings for the three periods ended on June 26, the poorest months of the year, amounted to £2,838, after writing off £885 as a proportion of goodwill on the recently acquired services, and providing for interest charges on the whole capital invested in the road services. These satisfactory results were achieved after restoring wages to the 1931 level and giving full effect to all award conditions, including the reduction of hours. Although the wages expenditure increased, it was not necessary to make any increase in fares or freight charges. A further passenger road service, the K Motors, operating in the Rotorua area, has been bought recently by the New Zealand Railways. The purchase comprises the whole of the company's business, including a fleet of 16 service and tourist cars, and a large garage property. The Minister has intimated that the Railway Department intends to continue the regular and tourist services as at present operated by the company, and also hopes to retain the services of all the present employees, and to use as much as possible of the present organisation.

Road Planning in the U.S.A.

IN the year 1936, motorcar-train accidents in the State of Illinois accounted for 249 persons killed and 441 injured, in 385 reported accidents; the figures are given in the University of Illinois Bulletin for May, 1937, reproducing the papers presented at the Twenty-Fourth Annual Conference on Highway Engineering. In November, 1936, the Bureau of Public Roads proposed an expansion of the railway level crossing investigation, and information is to be furnished by the railways so that an order of priority in level crossing elimination may be established, based on factors of hazard and potential traffic delay. As regards the problem of accidents on roads, this is apparently as much a vexed question as it is in Great Britain. During 1936, Illinois accounted for 2,461 deaths of the national total of approximately 38,500, an increase of 5·5 per cent. over 1935. On a petrol consumption basis, which is equivalent to the vehicle-miles travelled, Illinois has the worst record, with a death rate of 20·7. Even so, an improvement has been reached over 1934, the worst year, when the death rate reached 26·3 per ten million gallons of petrol consumed. Signalling, especially lighting, and the design both of highways and of vehicles, are the principal factors in the prevention of accidents. Highway authorities generally recognise the need for modernisation, but lack of funds is mainly responsible for the delay. Among the conditions which make for greater safety is a suitable degree of superelevation on curves, and the formula for computing this in relation to radius on the three classes of road has been revised; the maximum superelevation has been changed to 0·1 ft. per foot of width.

The attention now being given to this factor of safety in the U.S.A., is in marked contrast with the absence of superelevation on curves on the English roads. State planning of highways is described in a paper by Mr. H. L. Kellogg, of the Illinois State Planning Commission, and the importance is emphasised of preserving scenic and historic beauty, and maintaining roads and parks free from artificiality. This is interesting in the light of recent criticism of the new German road system, and the much debated question of the future of English roads—whether the present roads here, which it is said have "just growed," are to be improved or whether they are to be supplemented by a properly planned trunk road system. For further progress in State highway planning in Illinois a census of road users is required, and for this purpose six automatic traffic recorders are being used, operated on the photo-electric cell principle, and supplemented as regards average mileage, &c., by interviewing a sample number of 35,000 road users. A detailed description is given in other papers of the soil-cement experiment, as one alone of the features of the general programme of improvement. It is startling to find the Illinois highway authorities lamenting that the vitally necessary modernisation should be delayed for "lack of funds," at a time when the surplus of labour is notoriously a feature of present-day conditions in the U.S.A.

Better Colour Rendering from Mercury Discharge Lamps

IMPETUS has been given to street, yard, and factory lighting by the development of the high-pressure mercury discharge lamp, as this provides about three times the light of the best filament lamps for a given consumption of electrical energy. A common objection to the discharge lamp is the unnatural light it produces, the rather ghastly appearance of people under its rays being sufficient to rule it out as a suitable illuminant for stations, shops, or restaurants. A further objection is the signal-green colour assumed by discharge lamps when viewed through a haze, and the danger which therefore attends its use in all but carefully selected positions near a railway. The General Electric Co. Ltd., maker of the well-known Osira mercury discharge lamp, has now effected a marked improvement in the red-deficient light spectrum of the mercury lamp by encasing the lamp in a second glass bulb the inside surface of which is treated with a substance that transmits all but the invisible ultra violet rays, and that uses these useless rays by becoming luminescent under them and emitting red light. During a recent visit to the new illumination research laboratories of the G.E.C. at Wembley, we were able to appraise the improved Osira lamp, and, while we think that ladies will still find fault with its colour rendering of their own persons, we are of the opinion that to all but the most fastidious the new light will appear satisfactory.

Railway Cartage and Mechanical Transport

A paper by Mr. H. W. Faircloth, of the L.M.S.R., read at the Commercial Motor Transport Exhibition, Earls Court, on November 11. It reviews railway cartage operations with particular reference to the progress of the railway companies in the mechanisation of their cartage equipment and future possibilities

PRIOR to 1914, the number of goods and parcels motors employed by the British railway companies was in the neighbourhood of 200. The company with which I was then associated, the L.N.W.R., owned 42, of which several vehicles which had started their career as buses in North Wales and elsewhere, and having become unfit for the heavy mileage involved in that capacity, were converted into goods carrying vehicles, and as such had a comparatively low mileage to cover. Many of the vehicles were taken over by the War Office at the outbreak of the war, and in consequence progress in mechanisation received a severe setback. The real start in mechanical road transport for railway services took place on the termination of the war. There was difficulty in acquiring new vehicles and as numbers of ex-Government machines, both British and American, were thrown upon the market, several hundreds of them were purchased by the railway companies. The acquisition of these vehicles stimulated the views of the railway companies as regards the possibility of certain classes of cartage work being performed more economically, and more efficiently, by motors than by horse strength.

By careful measurement and trial they gradually enlarged their motor fleets so that at the time of grouping a considerable increase in the number of motor vehicles had been accomplished, and in 1927 the cartage strength owned by the four group companies was 2,823 motors and 18,477 horses. During the next ten years there was some acceleration in the process of mechanisation due in the latter half of this decade in a large measure to the evolution of the mechanical horse, which is more suitable for a large proportion of railway work than the rigid motor; by the beginning of 1937 the railway companies' cartage strength was 9,075 motors and 13,125 horses, an increase of 6,252 motors and a decrease of 5,352 horses. It should be appreciated that not all the motors acquired have been in substitution of horses. Large numbers have been necessitated by the companies taking on cartage work of a kind not previously performed by them.

No longer is the railway collection and delivery area a circumscribed radius of a few miles round the stations, but the cartage boundaries have been pushed out in all directions wherever business is to be obtained, and there is now established a collection and delivery service covering the whole countryside which is calculated to meet fully the requirements of the trading public. At many hundreds of places throughout the country the railway companies have instituted country lorry services, which cater for the collection and delivery of traffic over a radius of ten to twelve miles from the stations. A further development ensuing from the railway " progress " campaign was the institution of railhead services which have been established in various parts of the country. These involve the distribution of traffic from selected bases over extensive areas. The country lorry services, railhead services, and throughout road work (which the companies undertake to perform under the powers obtained by them in 1928) cover such large areas that it was necessary to introduce mechanical means for successful results, and these services have been factors in the increased number of motor vehicles.

The speeding up of transit has been for some years a very important feature of railway transportation, and the value of motor vehicles for the conveyance of transhipments by road from main tranship stations to outlying stations has resulted in additional motors being acquired for this service. Because of these extended areas there is today a considerable portion of the work which can be covered more expeditiously and more economically by motors than by horses, even with the existing types of motor vehicle which for some years the railway companies have stated frequently are not ideal for railway work. There is, however, still a very large proportion of the work which, with motors as they are today, is more economically and little, if any, less expeditiously dealt with by horses, as may be gathered from the numbers the companies are still employing because those horses would not be employed if costs could be reduced by using an alternative type of equipment. It is in regard to the work upon which these horses are engaged that I propose to enlarge, as this is the field which offers itself for future mechanisation.

Collection and Delivery

A station's collected and delivered work may be divided under two headings: (A) full loads; and (B) sundries. The former consists of a complete load to or from one trader and the latter of a load made up of goods for a number of traders. The work involved in dealing with full loads will, I think, be appreciated by all without my entering into details, but so far as sundries are concerned, it should be stated that a sundry load in the case of parcels traffic will frequently entail up to 80 calls, and in the case of a goods load, up to 30, although the averages will be probably 50 to 60 in the case of parcels traffic and 15 to 20 in the case of goods traffic, and the round trip distance will vary from say half a mile to four miles (above that distance the work is usually covered by motors). I propose, however, to confine my remarks to goods traffic, on which by far the greater proportion of our cartage equipment is engaged. In the case of deliveries, the goods have been arriving at the station during the night and in the early hours of the morning; have been unloaded from wagons, checked, sorted into " round " order, loaded on the appropriate drays, and the delivery sheets made out in the delivery office.

The carters are rostered to begin duty at such varying times as experience at the particular station shows best meet the requirements, and by the time each man has fetched his horse from the stables, his load and documents should be ready for him to proceed immediately on his delivery round. Whilst the teams are away on their first round, spare drays have been placed at the loading points and are being loaded for subsequent deliveries. The greater portion of the men's time away from the station is taken up at firms' premises. Altogether, out of a working day of 8½ hr. the actual travel time of an ordinary horse team, or the time the wheels are actually moving, averages slightly over three hours, and the distance covered is in the neighbourhood of ten miles. The only

portion of a horse team's work on which a motor is able to save time is the actual travelling. All other operations must take at least as long. Probably very few motor engineers, if asked what average speed could be expected from a 2-ton motor engaged on such work, would guess a figure below, say, 10 m.p.h. Such an estimate would be very optimistic. Some little time ago the L.M.S.R. made a number of tests with various types of motors and various types of horses. A two-mile round course on level ground with the exception of a slight rise over one bridge was selected. The first half-mile was covered without a stop, representing the journey from the station to the beginning of the delivery round. Within the next mile varying numbers of stops were made (5, 15, and 25) representing calls on firms, and then the last half-mile was covered without a stop representing the journey back from the round to the station. The actual time travelling was taken including starting up the engines (the horses start themselves), but excluding all time at rest, representing the effecting of delivery, getting signatures, &c., which does not vary whatever type of unit is used. The average m.p.h. obtained in a number of tests for each group of stops by a two-ton motor and a walking horse were as under:—

Number of stops	Motor travelling time	M.P.H.	Walking horse travel time	M.P.H.
	min. sec.		min. sec.	
5	10 05	11·90	40 30	2·96
15	16 58	7·07	37 14	3·22
25	22 48	5·26	40 42	2·95

Applying these figures to a typical day's work for a horse on rounds involving a travel distance of two miles a trip with an average number of calls per journey of 15, we see that the day's travel distance of ten miles would be covered by a horse team in 3 hr. 6 min. and by the motor in 1 hr. 25 min., the motor thus saving 1 hr. 41 min., or practically one-fifth of a working day. From this it will be seen that a motor would be more economical than a horse on the work only if its working cost was only one-fifth more than the horse cost. This example is on broad lines, actually there are several other factors which have to be taken into consideration and which further complicate the issue. Some of these, such as the complete motor unit having to stand at station whilst being loaded, operate to the disadvantage of that unit as compared with a horse either "live" or "mechanical," as by means of spare drays or trailers subsequent loads can be prepared whilst the tractive unit is out on its round. On the other hand, gradients help the motor in comparison with the horse as does also the motor vehicle's ability to work double shifts.

In the case of full loads the calculations necessary to decide the type of unit most suitable for the work are comparatively simple. The basic costs per hour and per mile have been accurately determined for each type of cartage unit employed by the companies, the time which should be occupied in loading and unloading various types of commodities has also been ascertained having regard to the facilities on the sites where the work has to be performed, *e.g.*, cranage, assistance by firms' men, &c., and there follows a series of tables showing those calculations for varying distances for a four-ton consignment of a commodity of which the handling rate is 20 min. a ton at firms' premises and 15 min. a ton at station where not stand-loaded. It will be appreciated that in the case of the single-horse team and the two-ton motor such a consignment necessitates two journeys in each case.

Costs Based on L.M.S.R. Standard Costs for the Various Units

—	S.H. team	P.H. team	Motors		6-Ton M.H.
			2-ton	4-ton	
¼ MILE FROM STATION (½ MILE ROUND TRIP)					
	min.	min.	min.	min.	min.
Station detention	20	10	60	60	10
Travel time ..	20	10	5	3	3
Time at firms ..	80	80	80	80	80
	H. M.	H. M.	H. M.	H. M.	H. M.
Total time ..	2 0	1 40	2 25	2 23	1 33
	s. d.	s. d.	s. d.	s. d.	s. d.
Cost	3 4	3 7	5 8	7 0	4 1
Cost per ton ..	0 10 (Two trips)	0 10¾	1 5 (Two trips)	1 9	1 0¼
½ MILE FROM STATION (1 MILE ROUND TRIP)					
	min.	min.	min.	min.	min.
Station detention	20	10	60	60	10
Travel time ..	40	20	10	6	6
Time at firms ..	80	80	80	80	80
	H. M.	H. M.	H. M.	H. M.	H. M.
Total time ..	2 20	1 50	2 30	2 26	1 36
	s. d.	s. d.	s. d.	s. d.	s. d.
Cost	3 11	3 11	5 11½	7 4	4 4
Cost per ton ..	0 11¾ (Two trips)	0 11¾	1 6 (Two trips)	1 10	1 1
1 MILE FROM STATION (2 MILES ROUND TRIP)					
	min.	min.	min.	min.	min.
Station detention	20	10	60	60	10
Travel time ..	80	40	20	12	12
Time at firms ..	80	80	80	80	80
	H. M.	H. M.	H. M.	H. M.	H. M.
Total time ..	3 0	2 10	2 40	2 32	1 42
	s. d.	s. d.	s. d.	s. d.	s. d.
Cost	5 1	4 8	6 8	7 11	4 10
Cost per ton ..	1 3¼ (Two trips)	1 2	1 8 (Two trips)	1 11	1 2½
1½ MILES FROM STATION (3 MILES ROUND TRIP)					
	min.	min.	min.	min.	min.
Station detention	20	10	60	60	10
Travel time ..	120	60	30	18	18
Time at firms ..	80	80	80	80	80
	H. M.	H. M.	H. M.	H. M.	H. M.
Total time ..	3 40	2 30	2 50	2 38	1 48
	s. d.	s. d.	s. d.	s. d.	s. d.
Cost	6 2	5 4	7 4	8 7	5 3
Cost per ton ..	1 6½ (Two trips)	1 4	1 10 (Two trips)	2 1¾	1 3¾

In arriving at the above figures "variable" costs only have been taken, "non-variable" costs such as superintendence at stations, headquarter's expenditure, clerical costs, &c., have been excluded, as has also the cost of loading at the station. It will be seen that the cheapest unit for the various distances is:—

½ mile round trip	Single-horse team.
1 mile round trip	Single-horse team. / Pair-horse team.
2 mile round trip	Pair-horse team.
3 mile round trip	6-ton M.H.

The considerations in regard to collected traffic are practically identical with those for deliveries except that the detentions at firms' premises are usually greater in total owing to the carters frequently having to wait for consignments to be got ready. Somewhat similar calculations

are involved in deciding the type of unit most suitable for dealing with " sundries " loads, but complications arise through the necessity of reorganising the delivery or collection rounds so as to use the time saved by one particular type of unit as compared with another, and this revision of rounds necessarily alters the weight per load and the number of calls per journey. As an illustration, if an attempt is being made to replace five horses by three motors, each motor will have to do on average the work of 1·66 horses, and the five rounds hitherto covered by the horses must be shuffled and re-divided into three, each involving more work than the individual horse round, although in total, of course, the work, apart from mileage, would be the same. It is not practicable, therefore, to set out comparative tables for various types of units on " sundries " work. Every individual case has to be examined and decided on its merits, being measured on standards applicable to the particular work under review, which have been arrived at by a scientific analysis of each phase.

Coming at last to the point in which no doubt you are most interested—the prospects of future mechanisation. It will be understood that my views are based on the assumption that horse traction will not be barred either in part or *in toto* from the streets of large cities by legislation, the sole consideration being economy allied to efficiency. There will, I think, be a continued growth of what may be termed outskirt or wide area traffic, that is to say residential areas will be developed at greater distances from towns, factories will be built further and further afield to secure the benefit of cheap public service rates, &c., and the railway companies will intensify their collection and delivery services into rural areas. This in itself will necessitate the acquisition by the railway companies of more motor vehicles and the displacement of a certain number of horses owing to the transfer of business from towns, but I do not think that this substitution in itself will greatly affect the ratio of motors to horses. The additional motors necessary during the next ten years, consequent upon the conditions outlined above, will be probably only a few hundred for any of the four railway companies. Any major change-over from horses to motors can in my view result only from substantial reduction in motor costs, or, of course, substantial increase in horse working cost, and it would seem the former can be brought about only by a radical change in the type of motor available for our use. It has become a standard joke at these gatherings to say that the railway companies require a four-ton motor with the initial cost of a one-ton Ford, and the running costs of a motor cycle. Actually that is very nearly the position which will have to obtain if the bulk of our existing horse strength is to be displaced. One of the main considerations to be borne in mind when investigating the problem of mechanising a station's cartage is in regard to the number of units, particularly for collection work. While delivery can be spread over some 5½ hr. or more in the day, the collections are practically all concentrated into about three hours at the end of the day, and up to 75 per cent. of these have to be covered in the last two hours, so many of the firms requiring a call to be made at as late a time as possible. There is, in consequence, a minimum number of units required at each station below which it is not possible to go, irrespective of cost, and that minimum has to be decided by actual investigation at each station. It does not, therefore, necessarily follow that even if a motor is produced with total operating costs, say only one-fifth more than a horse team, that 25 motors can be put in at a 30-horse station to cover the work, although the working cost would be no greater. *Complete* substitution can be effected on an economical basis only if motor unit working costs are on a parity with horse unit cost.

Publications Received

The Development of the Automobile Radiator. By John Coltman. A paper read before the Midland Branch of the Institution of Mechanical Engineers on November 19, 1936. 8¾ in. × 6¼ in. 75 pp. Illustrated. Price 4s. net.—This paper, dealing also with the application of the automobile radiator to aircraft, railcars, industrial uses, air heaters, oil coolers, &c., was originally compiled with two objects. The first was to make available for those interested a clear account of the various species of the light high-efficiency liquid-to-air heat-interchangers, and to show the modifications introduced to suit varying conditions of service. The other object was to outline simply the actual conditions of operation and to show their effect or performance. It is only when one reads a review of what has taken place in the last twenty years, that a true appreciation of the progress in the radiator trade can be gained; this development the author has analysed. Dealing first with some of the deficiencies of mathematical treatment of radiator performance, the author then deals at some length with the variables affecting the interchange of heat. The basic types of automobile radiator—the water tube, the air tube or honeycomb, and the film type are described, together with details of the methods of assembly employed in each case. Considerations of the various developments of these types are then discussed and reference is made to French and German practice. The cooling of lubricating oil has of recent years received considerable attention, and the various distinctive designs of oil coolers are detailed. The exigencies of radiator design for railway vehicles are set out, and brief details given of some of the more notable installations, *i.e.*, on the G.W.R. railcars and on the Fliegende Hamburger. In the section devoted to air heaters, striking illustrated evidence is given of the excellent dispersion of the air obtained by a " unit " heater compared with that effected by the usual cast-iron radiator. The remaining space is largely taken up with descriptions of development tests for automobile radiators and examples of experimental plants. Dedicated " To the Tinsmiths and Toolmakers of John Marston Limited," any profits from the sale of this paper the author, in gratitude for past kindness, has decided to give to the Middlesbrough Settlement for the benefit of their work with the unemployed.

Papers Presented at the Twenty-fourth Annual Conference on Highway Engineering. Held at the University of Illinois, March 3-5, 1937. University of Illinois Bulletin No. 76, May 31, 1937, Urbana, Illinois. 9 in. × 6 in. 134 pp. Price 50 cents.—This booklet is noticed in an editorial on page 877.

Nozzle Testing Outfit.—A leaflet has reached us from C.A.V.-Bosch Limited, of Acton, London, giving full particulars of a nozzle-testing outfit. This outfit is suitable for use in every service and repair shop, small or large, where it is desired to adjust the opening pressures of nozzles and to inspect their spray qualities. The model described is for " S "-size nozzles and holders, that is, for those normally fitted to commercial vehicle engines. Full instructions for installing, operating, and maintaining the appliance are given.

Lead Acid Batteries.—A new catalogue of lead acid batteries for commercial purposes is now available from C.A.V.-Bosch Limited, Acton, London, W.3. The armoured plate and heavy flat plate batteries, 6- and 12-volt, described are specially recommended for the electrical requirements of petrol- and oil-engined goods and passenger vehicles, and a useful table shows the battery type suitable for the various lighting circuit loads encountered in such vehicles. A feature of the armoured plate batteries is the special construction of the positive plates, which minimises the risk of distortion or damage even after long and heavy service. The heavy-duty flat plate batteries have positive plates specially designed and produced to meet heavy starting loads.

Modern Trends in Road Vehicle Practice

Recent advances as exemplified by the Commercial Motor Show

THE 13th Commercial Motor Transport Exhibition, which was held at Earls Court from November 4 to 13, provided as usual an excellent indication of the mechanical efficiency of the industry and of the progress which has been made during the past two years. Although it cannot be claimed that any one outstanding improvement has been made since the last Olympia show in 1935, there was considerable evidence among the exhibits at Earls Court that there has been continuous progress in detail design.

The main interest naturally centred on the commercial vehicle and bodywork section, in which group 93 exhibitors occupied the whole of the ground floor comprising a space exceeding 140,000 sq. ft. These exhibits consisted of nearly 450 chassis and complete vehicles, including trailers, and represented all types of goods models, from the light three-wheel parcels van carrying a load of 5 cwt. to the eight-wheel lorry built for a load of 16 tons; and passenger models ranged from a small four-seat taxicab to double-deck buses and trolleybuses affording accommodation for as many as 68 passengers.

A.E.C. Regal chassis with English Electric bus body

Bodywork

It was noticeable that the bodywork of passenger vehicles showed detail advances in comfort and efficiency but in no cases departed from conventional practice. Moreover, there was a marked trend towards simplicity as compared with the wave which reached its crest two or three years ago for adding superfluous " gadgets " which may have proved an attraction to a certain type of pleasure-trip customer when the vehicle first entered service, but which experience has shown to be costly in maintenance without commensurate advantages.

One of our illustrations shows a 36-seat single deck bus for the Northern Ireland Road Transport Board which is typical of modern practice for inter-urban services. The body, a product of the English Electric Co. Ltd., has a near-side front entrance fitted with a single-hinged door, and an off-side front emergency exit. Tubular frame type seats are fitted with single spring cushions having Dunlopillo overlays. Strong parcels racks are provided along each side of the interior and there is also a commodious luggage container on the roof. The body is mounted on an A.E.C. diesel-engined Regal chassis with a wheelbase of 17 ft. 6 in.

Two outstanding examples of co-operation between chassis designer and body builder to secure greater seating accommodation were provided by exhibits on the stands respectively of Tilling-Stevens Limited, and Leyland Motors Limited. In the former, the exhibit comprised only a chassis (to which reference is made later) but the adoption of the new Tilling-Stevens opposed piston " pancake " engine offers obvious advantages for a body design affected to the minimum by the interference of the mechanical parts. Leyland Motors Limited exhibited a complete 40-seat single-deck bus, known as the Gnu model, with four steering front wheels. The body is full fronted and of metal framed construction, with the entrance position forward of the front wheels. All seats face forward without obstruction from wheel arches. The vehicle exhibited was in the livery of W. Alexander & Sons Ltd.

Thornycroft Buses for Iraq

There are seldom opportunities for the adequate display of vehicles built for export, but the exhibition enabled John I. Thornycroft & Co. Ltd. to show a notable example of a vehicle built in this country specially to meet the operating and climatic conditions of Iraq. This was one of three buses being supplied to the Iraq Railways and part of a large order for both goods and passenger vehicles for use in that country. The body, by Park Royal Coachworks Limited, is steel framed throughout, and all joints are electrically welded, excepting where ease of replacement requires riveting or bolting. The floor is of pine boards covered with linoleum $\frac{1}{4}$ in. thick. The side panels are of aluminium, as also are the exterior panels of the roof, which has an air space between it and the under lining. Entrances are by means of coach doors fitted on each side of the body, both front and rear. Individually adjustable armchair type reclining seats for 20 passengers provide an unusually high degree of comfort for long journeys. The interior fittings include such items as parcels racks, a Clayton-Dewandre heater, an ice chest, and first-aid equipment. To provide extra large luggage accommodation, the rear portion of the body is partitioned off from the passenger accommodation. A built-in luggage compartment in the roof provides additional space for light baggage; a tubular ladder at the rear affords access. The chassis is of the rough-track six-wheel Amazon class, fitted with a " 6LW " diesel engine of 8·368 litres capacity. The drive is transmitted through the main four-speed gearbox (an auxiliary gearbox gives a range of 8 forward and 2 reverse gears), to full floating rear axles. Left-hand steering has been provided. Special features include the provision of an oil bath air filter to prevent sand and

dust from being drawn into the engine, and also reserve fuel and lubricating oil tanks sufficient for 400 miles running. A reserve water tank of 10 gal. capacity enables the water in the radiator to be kept at a constant level on long journeys in tropical weather.

A prominent place amongst the goods transport models was occupied by units of the mechanical horse type. Karrier Motors Limited, for example, displayed as its latest example of the original mechanical horse the Cob Junior four-ton tractor powered by a four-cylinder petrol engine. Coupling and uncoupling of the trailer is controlled from the driver's cab and a turning circle of 18 ft. is afforded. The Cob Senior has a six-cylinder petrol engine and is designed to haul a payload of 6 tons.

Thornycroft diesel-engined coach for the Iraq Railways

The Perkins-diesel-engined mechanical horse, a product of Scammell Lorries Limited, was one of the notable innovations of the exhibition. So far, mechanical horses have relied on the petrol engine, mainly because the comparatively short journeys which they are called upon to perform are not the most fruitful field for the display of the advantages of the oil engine. Special circumstances, however, have resulted in the design of the new diesel unit to meet the operating conditions of the Mersey Tunnel. This has a gradient of 1 in 22 at one of its entrances and also a minimum speed limit throughout the tunnel of 6 m.p.h. Some difficulty was experienced in maintaining the necessary speed with a fully laden 10-ton trailer, and it was to overcome this difficulty that the diesel-engined vehicle was introduced. We understand that in service it hauls 10-ton loads on this route as easily as the corresponding petrol-engined unit with a load of 6 tons.

The Scammell exhibits included not only a variety of modern mechanical horses in the liveries of the various main-line railway companies but also a handsome 15/16-ton rigid eight-wheeler for the railway-associated company, Currie & Co. (Newcastle) Ltd. This has an overall length of 29 ft. 10 in. and a wheelbase of 17 ft. 5½ in. The power unit is a six-cylinder Gardner diesel engine developing 102 b.h.p.

Engines

Although the proportion of oil-engined vehicles on view was not unduly large, considering the extent to which such prime movers are now used, certain exhibitors showed nothing but oil-engined chassis, and in these instances the Gardner engine in sizes from 50 to 100 b.h.p. seemed very popular. Technically, the interest in the engine section was divided between the horizontal types and engines for new fuels. Neither category was well represented in numbers, although a great development of each may be foreshadowed before the next show. The Henschel horizontal engine, a huge 12-cylinder model, develops no less than 300 b.h.p. on the continuous rating, such a power being necessary to fulfil the requirements of driving a 70-seater single-deck passenger bus over the *Reichautobahnen* at 80 m.p.h. It is located below the floor in the front of the bus, but the smaller Tilling-Stevens horizontal engine is located beneath the floor about the mid-length of the chassis. Both types give the same characteristics of maximum revenue-earning floor space, clear vision, lower centre of gravity, and a tendency towards a reduction in vibration.

The Tilling-Stevens engine has eight cylinders in two banks arranged *vis-a-vis;* the bore and stroke have the unusual proportions of 110 mm. by 98 mm. respectively. On an R.A.C. rating of 60 h.p the maximum b.h.p. is 110 at 1,650 r.p.m., obtained on a weight of 10·5 lb. per b.h.p. The crankcase and two cylinder blocks are formed of an integral casting with wet type liners inserted. Lead-bronze linings on steel shells are used for both main and big-end bearings, and an unusual feature for so small an engine is that the cylinder heads are individually cast, of aluminium alloy.

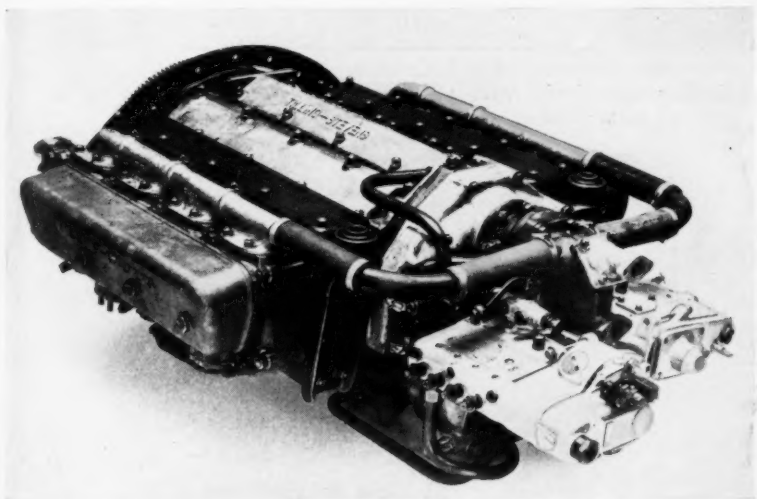
Oil engine speeds would not appear to have increased greatly if the exhibits were taken as representative, for only the Perkins (2,600 r.p.m.) and Mercedes-Benz

(2,800 r.p.m.) were rated at over 2,500 r.p.m. But as there are a dozen models on the market which can operate at normal maximum speeds of 3,000 to 3,500 r.p.m., the next show may bring a crop of super-speed engines, for by that time the fuel consumption, now very high, should have been reduced.

Henschel showed a 250 b.h.p. engine using liquid gas (butane or propane), which was interesting apart from the fuel used in that it was a 12-cylinder engine with two vertical banks of six cylinders set side by side. One or two producer gas lorries were shown by firms with Continental associations, e.g., Latil and Henschel. Here, again, were exhibits, few in number, which may be increased tenfold at the next show.

Entirely new engine models were few in number; one of the most noteworthy, apart from the Tilling-Stevens *vis-a-vis*, is the compact Thornycroft 75 b.h.p. six-cylinder engine. In both the petrol and diesel ranges, four-cylinder engines were as numerous as the six-cylinder type, and with the exception of the two-stroke petrol engines used in the Trojan tractors, all were on the four-stroke principle.

Above: A Thornycroft Sturdy four-ton lorry with detachable hinged sides and tailboard. The unladen weight is under 2½ tons, so that a speed of 30 m.p.h. is permissible



Left: Tilling-Stevens horizontal diesel engine as fitted to the maker's Successor and Yeoman chassis

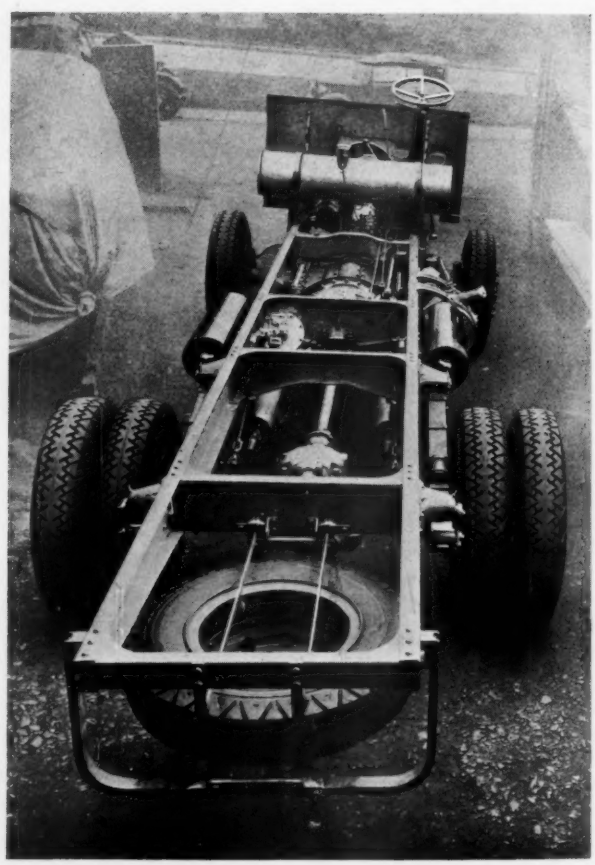
Below: Latil Traulier with four-wheel drive, in the joint service of the L.M.S.R. and G.W.R.

Transmission

The transmission exhibits also showed a surprising feature in that none of the Lysholm-Smith hydraulic converters was on view, although Leyland has built over 1,500 of them, and their popularity for vehicles in municipal services is extensive. Practically all the lorries except Leyland and Dennis (five-speed) were fitted with four-speed gearboxes, and most of the passenger vehicles had five-speed boxes, but the Tilling-Stevens passenger and freight diesels cast the shadow of coming

Leyland 100 b.h.p. oil-engined lorry with leading four-wheeled truck and fully-floating rear axle with overhead worm drive

Chassis of A.E.C. Mammoth Minor showing rear truck with double-reduction spiral bevel drive on the inner axle



Tilling-Stevens Yeoman 8-ton chassis with "pancake" diesel engine having eight cylinders horizontally opposed

events by the incorporation of a seven-speed preselective gearbox, in this case of the Maybach pattern. Tilling-Stevens also showed another transmission novelty—a petrol-electric military lorry in which the electric drive was supplemented by a two-speed Cotal electro-magnetic epicyclic gearbox for use in emergencies. Similarity with railcar practice was to be noted in the Daimler oil-engined vehicles, which have a Gardner engine, fluid flywheel, and a Wilson epicyclic gearbox.

Chassis

In this division developments in general have tended in the direction of deeper and stiffer frames of simplified form, often with dead-flat tops, and in improved details of suspension and truck design. A particularly interesting innovation was the so-called swivel-slider unshackled spring of Jonas Woodhead & Sons Ltd., which has trunnion ends giving exceedingly rigid frame fastenings, ample bearing areas, and forming a substantial check to the rolling of vehicles with high and heavy loads, in conjunction with the elimination of the usual pin and eye connections.

On a chassis of the modern type the load-carrying floor or platform can be carried almost to the forward extremity of the frame so that the load imposed on this per foot run is practically uniform, and provided there is no excessive back overhang, any difference between the loading of front and rear wheels is attributable in the main to the positioning of the engine and gearbox. With the conventional chassis layout the weightier units are in the front so that the logical plan in a six-wheeler is to have more wheels in front than behind. This plan had been followed by Leyland Motors Limited, and in two of that company's vehicles, a 10-ton lorry and a 40-seater bus which were otherwise fairly conventional, the front end was supported by four steerable wheels steered on the Marles system. The two front axles were of orthodox design and the connections between these and the steering box presented no undue complication. The fully-floating rear axle carried the worm drive from a four-speed gearbox. The arrangement was on the whole simpler than the more usual twin driving axle one and was claimed to provide smoother riding.

On the other hand, the Associated Equipment Co. Ltd., in its Mammoth Minor, retains the two axles at the rear, but the inner one is the driving member and has four wheels, while the outer axle is a trailer with only two wheels. The rear truck and its suspension are designed to relieve the rear tyres, which normally take a good deal of load when manœuvring.

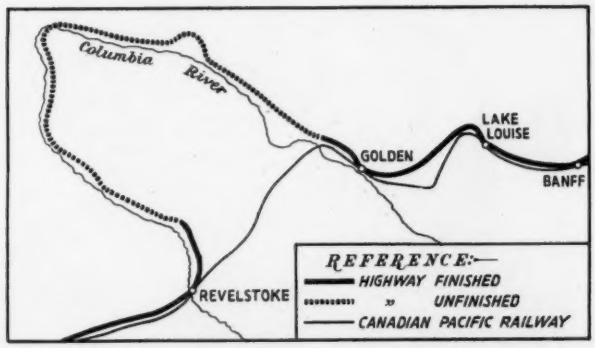
Overseas Notes

Western Australian Tramways and Trolleybuses

THE Western Australian Government Railways Administration owns and operates a system of tramways and trolleybuses in the City of Perth and its suburbs. The rolling stock at the close of the financial year ended June 30, 1937, consisted of 68 bogie tramcars, 53 four-wheeled tramcars, and three trolleybuses. The total carrying capacity of the trolleybuses is 162 passengers, 54 in each. The tramways have a length of 17 miles 20½ chains double track, and 22 miles 6½ chains single track, and in addition the equivalent of 7 miles 50 chains of single overhead line was used by trolleybuses. During the year ended June 30 last the tramways and trolleybuses carried 30,071,102 passengers, who brought in £285,034. Working expenses were £232,965, or 81·73 per cent. of gross earnings, and the surplus of earnings over working expenses amounted to £52,069, equivalent to a return of 4·71 per cent. on capital. Interest charges were £51,377, leaving a final surplus of £692. In the trolleybus services the total mileage run was 116,484 compared with 101,656 in the previous year. Trolleybus passengers numbered 841,375, an improvement of 84,156 passengers or 11 per cent. over the 1935-36 figure. Earnings increased by £726, and the final result was a surplus of £714, an improvement of £382. An extension of the trolleybus service from the West Leederville terminus to Wembley is expected to be established this month, and the conversion of the Claremont route to trolleybus service is expected to be completed next March. Orders have been given for one complete unit and for thirteen chassis, for which bodies will be manufactured in the State.

C.P.R. Motorcar "Ferry" Service

During the past summer (June 15 to September 16), the Canadian Pacific Railway successfully offered a special facility between Revelstoke (British Columbia) and Golden, by attaching motorcar vans to the regular passenger trains between these points for the purpose of "ferrying" motorcars across the gap in the transcontinental highway over the Selkirk mountains. The train journey was made in daylight and the motorcars were available at either end immediately after the arrival of the train which carried them. Advance notice of 1½ hr. to the C. P. R. agent was required at the shipping point. Every motorcar had to be accompanied by at least one passenger holding a one-way ticket costing $3·65. The rates for the carriage of the motorcars themselves ranged from



$12·50 to $17·50, depending upon the wheelbase. Passenger trailers in actual use for touring purposes were also carried at a rate of from $7 upward, depending upon their length, providing they did not exceed 25 ft. in length, 6 ft. 6 in. in height and 6 ft. 10 in. in width.

Fines for Boarding Moving Trams in Turkey

Passengers who board or alight from moving tramcars in Istanbul (Constantinople) are fined one Turkish pound (3s. 2d.) on the spot by the police, with the alternative of arrest. The money so obtained is devoted towards the cost of building new roads for pedestrians only. Various European countries have similar arrangements whereby fines for admitted minor travel offences are payable direct to the police.

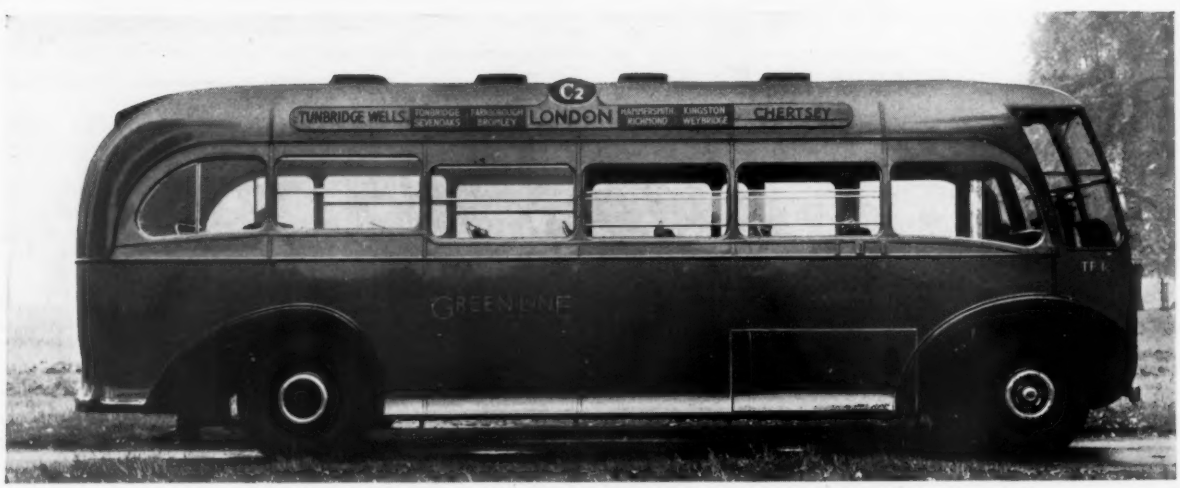
Road Transport in Moscow

At present there are 232 trolleybuses in service in Moscow, which carry an average of 240,000 passengers daily, but it is expected that at the end of the present year 157 new trolleybuses will have been put into operation, and that, by the end of next year, 1,000 trolleybuses will be running on the Moscow streets, including 52 double-deck vehicles. The Yaroslavl motor plant is now preparing for the regular production of double-deck motorbuses. Moreover, Moscow is soon to build its first experimental station (designed by the Central Administration of the Gas Industry) for compressing gas for the service of lorries and buses designed to work on gas instead of liquid fuel. The gas will be transmitted to the station from the Moscow Gas Works through a pipe line. If the experiment proves successful, similar stations will be built in other parts of the Soviet Union. The change to the use of gas by heavy vehicles is expected to effect a considerable economy of petrol.

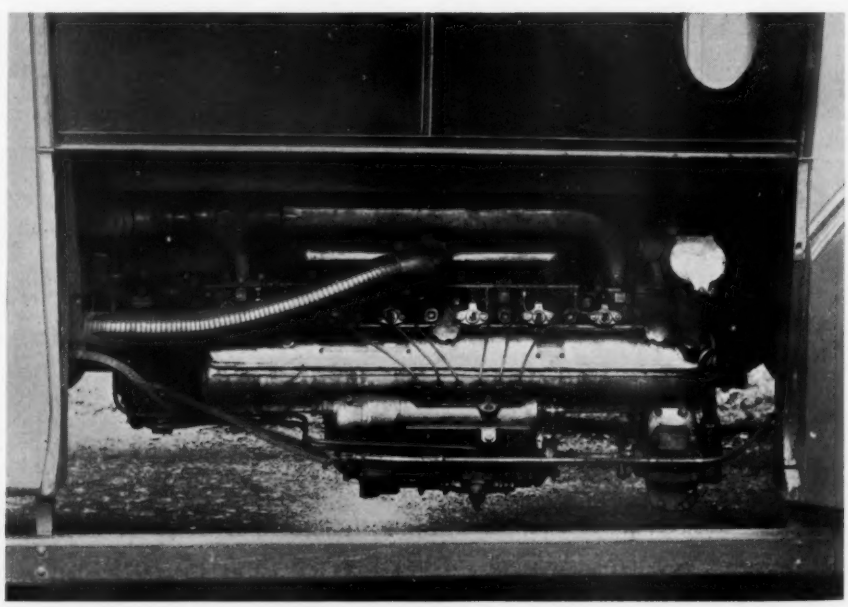
Experimental Horizontal-Engined Green Line Coach

(see article opposite)

Left : Near-side view, showing the excellent visibility afforded the driver



Above : Off-side view of the coach showing hinged panel giving access to the engine



Right : The horizontal Leyland diesel engine with hinged panel lifted

London Transport Horizontal-Engined Coach

A new vehicle which, in addition to novel mechanical features, provides easy control and unusually good outlook for the driver

IN order to produce a 34-seat coach with all the passengers facing forward, an experimental Green Line vehicle has been built by Leyland Motors Limited, in conjunction with the engineers of the London Passenger Transport Board, in which the basis of the design is a flat diesel engine. Instead of being in the front of the vehicle, the engine lies on its side on rubber mountings under the floor, about a third of the way down the chassis. Better balance is thereby secured, and improved springing has been made possible. Tests have shown that at 30 m.p.h. the finest print can be read comfortably in the back seat.

At the same time, an effort has been made to contribute to the safety of vehicle operation by improvements in the visibility afforded the driver, both under normal and adverse climatic conditions, and also by improvements in the ease of control, particularly braking and gear changing. Brakes and gears are operated by compressed air, needing only an extremely light touch which causes no fatigue. The gear lever is situated so that the driver does not have to remove his hands from the steering wheel, being immediately below the wheel. The driving seat is 18 in. higher than the driving seat on similar vehicles in the London Transport fleet, and the driver has been given the best possible view in all directions. He can see the road to within 6 in. of the front wheels, so that a child or a small dog immediately in front of the bus is not invisible. Moreover, this viewpoint enables him to see the kerb immediately in front of the nearside front wheel, a great assistance when driving in fog.

The vehicle employs standard Leyland units wherever possible, and the engine is fundamentally a standard Leyland diesel with various alterations to make it suitable for mounting on its side. The engine is flexibly mounted on two rubber mountings specially designed to give freedom from vibration. The transmission consists of a standard fluid flywheel and pre-selective gearbox similar to that which has been used by London Transport for some time, but incorporates considerable modification of the pre-selecting and gear operating arrangements. The gear changing is by means of compressed air, actuated by the pedal in the driver's cab.

Gearbox Operation

Gear selection is electrical, but an air pressure cylinder has been incorporated inside the gearbox in place of the usual main spring. This cylinder is connected by a pipe line to an air-pressure reaction valve, the control of which is in turn coupled to the gear engaging pedal. The reaction valve is arranged so that normally it admits a pre-arranged air pressure to the cylinder, thus holding the gear selected in engagement. When the gear engaging pedal is depressed it shuts the reaction valve and releases the air in the pressure cylinder, thus allowing the busbar to fall and permit a gear change in the usual manner.

Gear selection is made by means of solenoids, which are carried on the gearbox side cover and replace the usual camshaft. The solenoids are wired to the gear lever, the circuit including an electro-pneumatic switch. When the pedal is up and air pressure on, the switch breaks the circuit and none of the solenoids is energised. When the gear lever is moved to a gear position the required circuit is then preselected, and upon depressing the gear pedal air pressure is released and the electro-pneumatic switch completes the circuit. The solenoid then becomes energised and pushes in the strut required. When the pedal is released the circuit is broken and the solenoid de-energised, but the strut is then retained by the busbar and the gear becomes engaged in the usual manner. Neutral is obtained by partial engagement of first and reverse speeds, as in a standard gearbox, and, on this account, first and reverse speed solenoids are spring loaded permanently, and when a gear is obtained these solenoids are energised and caused to withdraw whilst the gear change is being made; second, third, and top gear solenoids are not spring loaded, and merely push their respective struts as required. For reverse gear, the first speed solenoid is withdrawn, the remaining solenoids not being energised; and for first gear, the reverse solenoid is withdrawn.

To prevent the vehicle being driven before sufficient pressure is available to grip the gearbox drums without slipping, an electro-pneumatic switch has been incorporated on the air system, which closes the main electric circuit when a pressure of about 5 lb. per sq. in. has been reached. By this means, it is impossible to drive the vehicle until sufficient pressure has been obtained.

The net result is that a gear change is performed in the standard manner and the gear lever and pedal movement is much lighter, with the further advantage that the pedal travel remains constant for all gears, and the gear lever can be moved without the hands being taken from the steering wheel.

Braking

The brakes are operated by compressed air and provided with full automatic adjusters so that the efficiency of the braking is maintained at the optimum under all conditions of service. The control of the brakes has been made light, but it incorporates a reaction valve so that the operation by the driver is sensitive to the actual rate of retardation given to the vehicle.

The necessary air pressure for the operation of the gearbox and brakes is obtained by means of a rotary compressor driven from the front of the engine, the compressor being coupled to a dual reserve tank such that the rate of build-up of air pressure is extremely rapid and prevents any possibility of delay in the vehicle leaving the garage, the controls being inter-connected in such a manner that it is impossible for the vehicle to be moved unless an adequate air pressure is available.

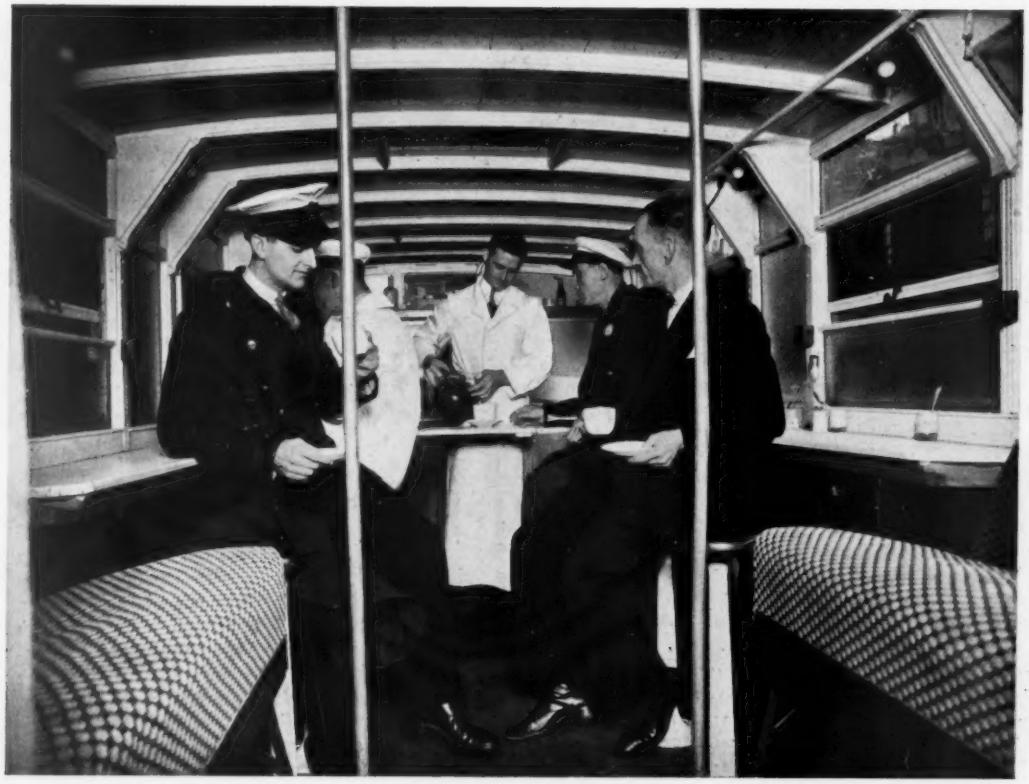
Passenger Accommodation

The interior of the body is finished in the standard London Transport interior decoration scheme, employing special pressed metal finishers for the elimination of corners and dust traps, and including built-in parcel racks and a high standard of illumination. The vehicle is heated from the main engine radiator, and the heat supply can be controlled, or substituted by cold air from the front of the vehicle in summer. Ducts are provided beneath the floor of the vehicle to distribute the hot or cold air to the various parts of the body along grills provided in the lower panels beneath the passenger seats.

Catering Facilities for London Busmen

See editorial note on page 876

The attractively-arranged counter of the canteen in Bromley garage, London Transport



Interior of an old-type bus which has been converted into a mobile canteen for use at terminal points where ordinary refreshment facilities are not easily available

New L.M.S. Hotel at Leeds

Main front of Queen's Hotel facing City Square. Entrance to station on left, and new L.M.S.R. offices in course of erection at extreme right. (*See article on page* 871)

Grill room, which is entered from the left of entrance hall

American bar, near entrance hall

Part of entrance hall showing reception office

One of the 206 bedrooms

Photo] [Yorkshire Post

The Princess Royal, Earl of Harewood, and Sir Josiah Stamp at the opening

NEW L.M.S HOTEL AT LEEDS (*see article on page* 871)

RAILWAY NEWS SECTION

PERSONAL

Air-Marshal Lord Trenchard, who, as recorded in our issue of October 22, has recently been elected a Director of Rhodesia Railways Limited, is to visit Rhodesia next February as a guest of the Government.

The Port of London authority, at a meeting on November 11, appointed Mr. J. D. Ritchie, M.C., who at present holds the office of Solicitor and Secretary, to be Deputy General Manager. This foreshadows the retirement of Sir David Owen from the General Management of the authority, a position he has occupied for over 15 years. Sir David will not, however, be relinquishing his duties for some little time yet.

Presentation to Sir Herbert Walker

Sir Herbert Walker, who retired on October 14 from the general managership of the Southern Railway (see our issue of October 8), was on November 2 the recipient of a presentation from the retired officers of that company. Sir Herbert was the guest of the retired officers at a luncheon, presided over by Mr. R. E. L. Maunsell, at the Charing Cross Hotel, and, after Mr. E. C. Cox had proposed his health, Mr. H. A. Sire made the presentation of an easy chair. The retired Southern Railway officers who attended the luncheon were:—

Capt. J. T. Blake; Messrs. A. H. Bull, F. Bushrod, W. J. Clayton, E. C. Cox, R. Duckworth, A. M. Harris, W. J. Hatcher, G. T. Hedge, H. E. Judd, R. E. L. Maunsell, E. Shephard, H. A. Sire, F. E. Wentworth-Sheilds, F. H. Willis, J. S. Wilson.

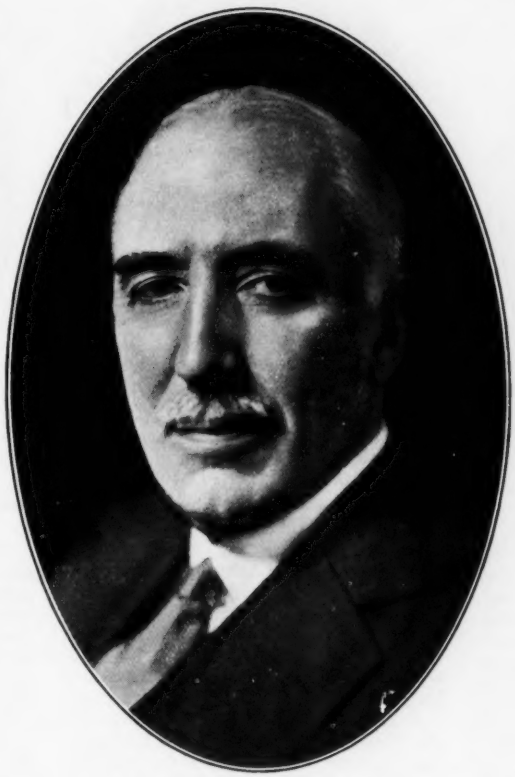
Sir Felix J. C. Pole, General Manager of the Great Western Railway from 1921-29 and now Chairman of Associated Electrical Industries Limited, has been appointed to the board of Milford Docks.

Sir Hugh Arthur Rose, a Director of the L.M.S.R., whose death on August 14 was recorded, with a biographical notice, in our issue of August 20, left personal estate in Great Britain valued at £56,080.

Mr. Colin Bonsfield Broome has been appointed a Director of the Midland Railway Company of Western Australia Limited, in succession to the late Mr. Andrew Williamson, whose death was recorded in our issue of November 5.

It is with regret that we record the death on November 10 of Mr. Harold C. Broadbent, a Director of Kitchen & Wade Limited, of Halifax, manufacturer of machine tools.

Mr. Arthur E. Towle, C.B.E., Controller of L.M.S. Hotel Services (whose new hotel at Leeds is described elsewhere in this issue), was educated at Marlborough College, and after leaving school spent several years travelling, gaining experience in hotels in America and on the Continent. He entered Midland Railway service in 1896, and in 1898, he and his brother, Mr. (now Sir) Francis Towle, became Joint Assistant Managers under their father, Sir William Towle. From 1911 they were associated directly with their father as Joint Managers of Hotels and Refreshment Rooms, and on Sir William's retirement in March, 1914, they took over full control jointly. On Sir Francis Towle's retirement towards the end of 1919, Mr. A. E. Towle became sole Manager of Hotels and Refreshment Rooms. He received a C.B.E. in January, 1919, for war services. On the formation of the London Midland & Scottish Railway he was appointed Manager, Midland Hotel Services, and in 1925 was appointed Controller of the whole of the company's hotels, refreshment rooms and restaurant car services in England, Wales, and Scotland. The following facts and figures give some idea of the range and size of Mr. Towle's responsibilities:—



Mr. Arthur E. Towle, C.B.E.

Controller of L.M.S. Hotel Services, whose new Queen's Hotel at Leeds was opened on November 12

Number of hotels:—	
England	14
Wales	1
Scotland	11
Total	26
Total staff employed ...	8,005
Dining and kitchen cars ...	304
Buffet cars	5
Meals served annually in dining cars	4,000,000
Gross receipts from hotel services (including dining cars, station refreshment rooms and station kiosks)	£3,000,000

Institute of Transport Elections

The following members and associate members were elected during the summer and autumn:—

MEMBERS

Mr. George Bishop, Assistant for Rates and Fares, Southern Railway.

Mr. P. E. R. Graefe, Secretary and Commercial Manager, Maidstone and District Motor Services Limited.

Mr. W. A. Smyth, Mechanical Engineer, Ceylon Government Railway.

ASSOCIATE MEMBERS

Messrs. G. H. Anthony, H. S. Atkins, K. M. Dowrick (G.W.R.); Messrs. J. C. Bonstead, E. Townley (L.M.S.R.); Mr. C. Slater (L.N.E.R.); Mr. M. J. Buckett (Southern Railway); Mr. H. A. Davis (East Indian Railway); Messrs. J. P. Fahey, J. A. Jones (N.S.W. Government Railways); Messrs. F. Goodyear, E. A. L. Hardman (London Transport); Messrs. A. L. Leach, F. A. West, W. A. Thorburn (Port of London Authority); Mr. J. D. Lewis (Burma Railways); Mr. A. J. Pragnell (Nizam's State Railway); Mr. J. A. S. Rolfe (Bombay Port Trust); Mr. H. C. Towers (B.B. & C.I. Railway).

Mr. A. M. Wellington, Superintendent of the São Paulo (Brazilian) Railway, is now visiting this country on leave.

We regret to record the death on November 11 of Sir George Frederick Clucas, Chairman of the Isle of Man Steam Packet Co. Ltd. In September this year, as recorded in The Railway Gazette of September 24, he was nominated to the board of Isle of Man Air

Services Limited, which now represents the fusion in the Isle of Man area of the interests of Railway Air Services Limited, Olley Air Services Limited, and the Isle of Man Steam Packet Co. Ltd. This company represents a step towards the unification of internal air lines, forecast in our issue of August 20.

Mr. C. H. Sutherland, whose appointment as Assistant Accountant, L.M.S.R., was announced in THE RAILWAY GAZETTE of October 29, began his railway career in the Traffic Manager's Department of the former Highland Railway in 1905. Two years later he was transferred to the Accounts Section of the Engineering Department, and in 1913 to the Accountant's Department. In 1925, following the formation of the L.M.S.R. group, Mr. Sutherland was transferred to Euston as an investigator of expenditure and costs, and in 1934 he was appointed Assistant to the Accountant, from which position he is now promoted. In 1933 Mr. Sutherland was selected as an assistant to the Railway Commission, appointed under the chairmanship of Sir Guy Granet, to inquire into the financial position and the working of the South African Railways.

Elliott] [& Fry

Mr. C. H. Sutherland

Appointed Assistant Accountant, L.M.S.R.

Mr. E. H. d'E. Darby, who, as announced in our issue of November 12, has been appointed Assistant Engineer, St. Pancras, L.M.S.R., was educated at Cheltenham and Clare College, Cambridge University, taking the B.A. degree (Mathematical Tripos) in 1902. In October of that year he began a term of pupilage under the late Mr. E. B. Thornhill, then Chief Engineer of the London & North Western Railway. Part of this period was spent in the drawing office at Euston, and part assisting on the construction of Garston New Dock, where he became Assistant to Mr. W. E. Thornhill in 1905, remaining on this work until its completion in 1910. He was then appointed Assistant to the District Engineer at Walsall, where he remained until 1917, except for a short period of railway work in France. From January, 1918, he acted as District Engineer at Crewe, which appointment was confirmed in 1919. In September, 1920, he was appointed District Engineer, Manchester, the position he held until appointed Divisional Engineer (Eastern Division), Derby, in January, 1929. When the Chief Civil Engineer's Department was reorganised in 1935, Mr. Darby was transferred to St. Pancras as Assistant Engineer (Permanent Way), the position from which he is now promoted. Mr. Darby is a Major in the Engineer and Railway Staff Corps, and a Member of the Institution of Civil Engineers.

Mr. E. H. d'E. Darby

Appointed Assistant Engineer, St. Pancras, L.M.S.R.

Mr. James Briggs, who, as recorded in our issue of November 12, has been appointed Assistant Engineer (Permanent Way), St. Pancras, L.M.S.R., is the eldest son of the late Mr. James Briggs, C.B.E., at one time Engineer-in-Chief, Midland Railway. He joined the Chief Engineer's staff of the former Midland Railway in 1908, and in 1912 was appointed Assistant to the Western Divisional Engineer. In October, 1914, he was granted a temporary commission in the Royal Engineers and proceeded to France in February, 1915, serving there until 1919. During this period he was engaged on various railway constructional works under the Director General of Transportation, being promoted to Captain in April, 1916, and Major in June, 1918. He was mentioned in despatches on March 16, 1919. He returned to rail-

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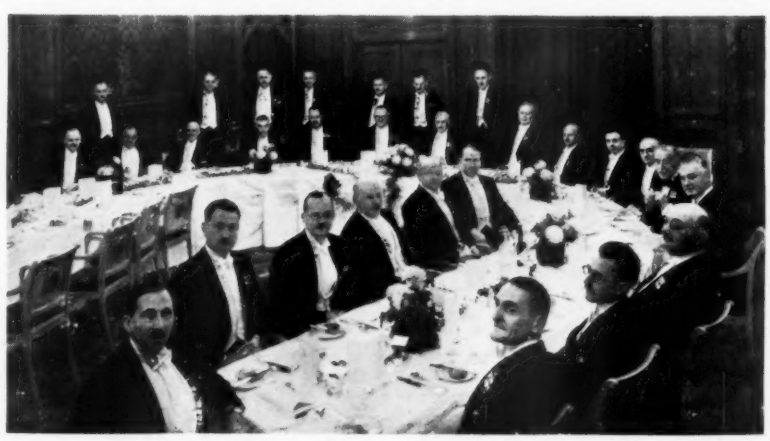
Mr. James Briggs

Appointed Assistant Engineer, Permanent Way, St. Pancras, L.M.S.R.



Annual Reunion Dinner of the Royal Engineers (Railway Operating Division) at the Trocadero Restaurant, London, on November 12

Photo] [Swaine

(*see report on page* 897)

way service in the New Works Section of the Chief Engineer's Department, Midland Railway, and in October, 1920, was appointed Southern Divisional Engineer. He continued in a corresponding position under the L.M.S.R. until April, 1928, when he became District Engineer, Bangor; and was transferred to the Chief Engineer's Office, St. Pancras, as Senior Assistant (Permanent Way) on August 1, 1935. Mr. Briggs is a Member of the Institution of Civil Engineers.

We regret to record the death on November 8 of Ir. E. C. W. Van Dyk, Joint General Manager of the Netherlands Railways Company. On the day of his funeral, November 12, all work and traffic on the system was stopped for one minute at 12 noon in tribute to his memory.

INDIAN RAILWAY STAFF CHANGES

Mr. J. Mackinnon, officiating Director of Civil Engineering, Railway Board, has been appointed to officiate as Chief Engineer, N.W.R., as from September 15.

Mr. E. C. Whelan, officiating Senior Government Inspector of Railways, has been granted leave for 1 year and 5 months preparatory to retirement, as from December 2.

Mr. H. J. Darling, Chief Electrical Engineer, E.I.R., has been granted four months' leave as from September 10.

Mr. P. D. Paude has been appointed to officiate as Deputy Controller of Railway Accounts as from September 1.

Mr. A. B. Turner, Deputy Chief Mechanical Engineer, Running (Carriage & Wagon), E.I.R., has been permitted to retire from Government service as from September 5.

Mr. H. W. Puttick has been appointed to officiate as Chief Electrical Engineer, E.I.R., as from September 10.

Mr. W. T. Biscoe, V.D., Divisional Superintendent, Ferozepur, N.W.R., has been granted six months' leave as from October 15.

Mr. W. B. Burford on returning from leave in England becomes Engineer-in-Charge, Permanent Way and Stores, G.I.P.R., Bombay.

Mr. S. M. Basrur, M.A., has been appointed Deputy Agent (Staff), G.I.P.R.

Mr. H. A. Carson, who, as announced in our issue of November 5, has been appointed General Manager of the Central Vermont Railway, was born in Toronto in 1888; he was appointed Commercial Agent, Grand Trunk Railway, at Montreal in 1917, District Freight Agent, Canadian National Railways, Toronto, 1928, General Freight Agent of Canadian National-Grand Trunk lines at Boston in 1930, and General Freight Agent of Central Vermont lines in 1932. He is a Director and General Freight Agent of Central Vermont Terminals, Inc., of New York, a member of the Vermont State Chamber of Commerce, the New England Council, Associated Industries of Vermont, and New England Traffic Club.

COLONIAL OFFICE APPOINTMENTS

The Crown Agents for the Colonies announce the following first class appointments:—

Mr. K. D. Francis, to be Storekeeper, Nigerian Railway.

Mr. J. Hudson, to be Assistant Locomotive Superintendent, Kenya and Uganda Railways & Harbours.

Mr. N. F. Stevens, to be Assistant Workshops Superintendent, Mechanical Department, Kenya and Uganda Railways & Harbours

The late Mr. Henry Coulson Bond, who, as recorded in our issue of July 23, died on June 12 this year, left estate valued at £54,769 (£33,186 net). Mr. Bond was President of the National Federation of Iron and Steel Manufacturers in 1920-21.

Mr. F. W. W. Valpy, whose name is well known in China as a railway engineer, returned from Shanghai on October 23 for England, severing a connection with China extending over 32 years. Mr. Valpy retired from the position of Engineer-in-Chief of the Canton-Hankow Railway in 1930, having previously been District Engineer at Changsha: his connection with the line dates from 1911, and he went through the strenuous times of the revolution of 1911 when at Hankow. He constructed the Pachi river bridge, the largest bridge on the line, 1,440 ft. in length, as well as 40 miles of the railway, and did considerable surveying in the Hopeh and Hunan provinces In 1905 he was sent to China by the Crown Agents for the Colonies to survey the Canton-Kowloon Railway, and later acted as Engineer-in-Chief of the Shanghai-Nanking Railway for a time. Mr. Valpy had a long and varied career prior to coming to China; in 1889 he was on the Paraguay Central Railway, and later on the Federated Malay States Railways. Mr. Valpy intends to make his future home in England.

Opening of Fielden House

New headquarters of the Railway Companies' Association

From 5.30 to 7.30 last Tuesday afternoon, the Chairman and members of the Railway Companies' Association (of which Mr. G. Cole Deacon is secretary), held a reception at the new offices of the association in Fielden House, Great College Street, Westminster. The new building, which has been built on a site previously occupied by the London offices of the former Lancashire & Yorkshire Railway, in addition to the Secretary and staff of the Railway Companies' Association, also houses the Railways' Staff Conference. Acceptances were received from;—

Sir Alan Garrett Anderson, M.P., The Rt. Hon. L. S. Amery, M.P., The Rt. Hon. Lord Ashfield of Southwell, P.C.; Messrs. J. Armstrong, T. J. D. Atkinson, K.C., Jacques Abady, K.C., H. E. Allen, H. Aidley; The Hon. A. W. Baldwin; Messrs. A. L. Barber, A. F. Bound, W. Bishop, H. F. Burt, L. Browett, Ashley Brown, R. J. Barrett, H. Leslie Boyce, M.P., C. E. C. Browne; Sir Charles H. Bressey, Col. Sir Donald Banks, Sir Charles C. Barrie, M.P.; Mr. Oliver R. H. Bury.

Major William H. Carver, M.P.; Messrs. H. Adams Clarke, W. H. C. Clay, O. Cromwell, H. W. Chinn, A. B. Challacombe, W. Ashley Cummins, H. M. Cleminson, S. Cope Morgan, E. G. H. Cox; Lieut.-Col. E. T. Crutchley; Mr. G. Cole Deacon; Sir Ralph Cope, The Rt. Hon. The Viscount Clanfield, The Rt. Hon. Lord Clinton, P.C.; Mr. H. W. Corry; The Rt. Hon. The Earl of Dudley, Sir Francis H. Dent; Messrs. F. R. E. Davis, Ashton Davies; Major L. F. S. Dawes; Messrs. R. G. Davidson, Clement Davies, R. B. Dunwoody; The Rt. Hon. Lord Ebbisham; Mr. A. Eddy.

Messrs. E. B. Fielden, C. E. Fairburn, J. B. Forbes Watson, E. J. Fottrell, Mr. Foot; Sir William Firth; Mr. Eric Gore-Browne; Sir W. Guy Granet, Sir H. Nigel Gresley; Messrs. F. Gilbert, A. H. Grainger, Maurice S. Gibb, W. H. Gaunt, J. R. Gordon, Mr. Greenhill; Sir Thomas Gardiner, Sir William Gray, Sir George Gillett.

Mr. R. Holland-Martin, The Rt. Hon. Viscount Horne of Slamannan; Messrs. A. G. Hubbard, A. Howie, S. E. Hitchcock, R. H. Hill; Sir Cyril Hurcomb, Col. Frank Hilder; Messrs. D. H. J. Hartley, J. R. Hind, Frank Hodges, H. F. A. Hoskins, St. John Hornby, W. H. Hamlyn, Michael Hornby, W. H. Hanscombe, Victor Heal; Sir Ambrose Heal; Messrs. F. L. Holford, E. Holland-Martin, R. J. M. Inglis, J. B. Ismay; Sir Francis L'Estrange Joseph.

Messrs. K. Kerr, J. A. Kay; Sir Stephenson Kent, Mr. Cyril E. Lloyd; General The Hon. Sir Herbert A. Lawrence; Mr. F. W. Legett; Sir William Larke; Mr. D. R. Lamb; Sir Frederick Liddell; Messrs. F. J. Leathers, Guy Locock, W. A. Lee, S. C. E. Lloyd; The Rt. Hon. Lord Luke of Pavenham.

Mr. Henry Mansbridge; Sir Charles Le Morgan; Sir James Milne; Messrs. A. Maynard G. Marshall, J. McLaren, G. Morton; Sir Walter Monckton, Lieut.-Col. A. H. L. Mount, The Rt. Hon. Lord Macmillan of Aberfeldy, Sir Harold Morris; Messrs. R. E. L. Maunsell, Harold Macmillan, M.P., H. V. Mosley, H. Martin; The Rt. Hon. Lord McGowan; Mr. C. H. Newton; Sir John H. B. Noble; Mr. H. Napier; Lieut.-Col. Sholto S. Ogilvie.

The Rt. Hon. Lord Palmer, The Hon. Clive Pearson; Messrs. E. E. Painter, H. M. Piper; Mr. Justice du Parq; Messrs. R. Pezzani, B. de H. Pereira; Sir Thomas W. Phillips; Messrs. I. Buchanan Pritchard, F. R. Potter, H. B. Pearson, S. J. Page, C. C. Page, H. W. J. Powell, Arthur J. Phillips, J. Quirey; The Rt. Hon. The Earl of Radnor; Messrs. A. P. Ross, A. T. V. Robinson; The Rt. Hon. Sir Malcolm Robertson, Sir Alfred Read, The Rt. Hon. Viscount Runciman of Doxford, P.C.

Sir Josiah Stamp; Messrs. Charles Sheath, F. W. Showers, C. J. Selway, W. A. Stanier, F. Smith, G. S. Szlumper, H. L. Smedley, C. E. R. Sherrington, W. T. Streathers; Sir Joshua Scholefield, Sir Charles Stuart-Williams; Messrs. E. Short, W. A. R. Squance, Clarence D. Smith; Sir Gerald F. Talbot; Mr. G. R. T. Taylor; Sir John E. Thornycroft; Messrs. H. L. Thornhill, Alfred Tylor; Col. A. H. C. Trench; Messrs. R. H. Tolerton, F. Gordon Tucker, W. M. Teasdale; Major The Rt. Hon. G. C. Tryon.

Messrs. G. C. Usher, E. C. Vigors, Douglas Vickers, William Whitelaw; Sir Murrough John Wilson, The Rt. Hon. Lord Wigram; Mr. C. H. Whitelegge; Sir Ralph Wedgwood, Sir William Wood, Sir Herbert Walker; Mr. T. S. W. Wallington; Lieut.-Col. E. Woodhouse; Messrs. Arthur Watson, O.C. Williams, E. G. Woodward, S. Witherington; Sir Thomas Williams, Sir Evan Williams, Col. Sir Charles Wright.

STAFF AND LABOUR MATTERS

Wage Claims—London Transport

A joint meeting of the executives of the National Union of Railwaymen, the Associated Society of Locomotive Engineers and Firemen, and the Railway Clerks' Association was held in London on Thursday, November 11, to discuss details of a proposed claim to the London Passenger Transport Board for improved wages and conditions for railwaymen on the board's staff. The three joint executives reviewed the position in the light of the financial report of the London Passenger Transport Board and decided that the matter should be considered separately by the executives, after which a further joint meeting would be held.

National Health Insurance

The National Health Insurance (Juvenile Contributors and Young Persons) Bill was introduced into the House of Commons on October 27, 1937, and has been committed to a committee of the whole house.

The purpose of the Bill is to provide medical benefit under the National Health Insurance Act to boys and girls who on leaving school become employed before reaching the age of sixteen and thus to bridge the gap in medical supervision which at present exists between school medical service and the commencement of full insurance under the National Health Insurance Act. The Bill accordingly provides that any boy or girl who, after reaching school leaving age but before the age of sixteen, becomes employed within the meaning of the National Health Insurance Act, shall immediately become entitled as a "juvenile contributor" to medical benefit as though he were an insured person and that whether or not he remains continuously employed he shall continue to be so entitled until the end of the half-year in which he attains the age of sixteen and a half, or until he becomes entitled to the benefit as a fully insured person by reason of employment after the age of sixteen, whichever first occurs.

Annual Holiday Bill

When the second reading of the Annual Holiday Bill was moved in the House of Commons on Friday, November 12, a long debate ensued in which the Parliamentary Secretary to the Ministry of Labour said that from the Government's point of view the only question was the practical one of deciding upon the manner in which holidays with pay might be assured for the greatest number of workpeople, and not the question of deciding in favour of a compulsory system or a system of voluntary agreement. The Government thought that, as a departmental committee was investigating the relevant facts, it would be wiser for the House to support an amendment which moved that further information was required on the whole problem, before the Bill was read a second time.

The second reading of the Bill was rejected by 134 votes to 133, and the amendment carried by 130 votes to 122.

Holidays with Pay: Railway Companies' Statement to Government Committee

On Wednesday, November 17, evidence was submitted by the main-line railway companies to the committee appointed by the Minister of Labour to consider the question of holidays with pay. The memorandum of evidence was in two parts, the first, presented by Mr. Kenelm Kerr on behalf of the Railway Staff Conference, dealing with the number of staff employed, the number receiving holidays with pay, and the views of the railway companies in regard to holidays with pay.

The total staff employed by the four main-line railway companies at March, 1937, was approximately 573,000, of whom approximately 410,000 are covered by an agreed scheme of machinery of negotiation. They comprise all grades of wages staff engaged in the manipulation of traffic, usually described as conciliation grades, and the majority of the salaried staff. Outside this machinery of negotiation there are approximately 120,000 railway workshop staff who have a separate negotiating machinery.

The majority of the remaining 43,000 are either covered by separate schemes or are represented by trade unions with which negotiations relating to their rates of pay and conditions of service are conducted by the companies. The total number of staff receiving holidays with pay by agreement is about 538,300. In addition, holidays with pay, though not provided by agreement, are granted by the companies to other sections of staff, totalling approximately 27,200. The only staff not allowed any holidays with pay are almost entirely confined to grades coming within the dock industry, in which negotiations in regard to both decasualisation and holidays with pay are now in progress.

In view of the cost, the companies consider that the granting of holidays with pay is not a matter suitable to be dealt with by statutory enactment applying in equal terms to all industries, but should be regarded as an integral part of the contract of service. As such, it is a matter to be judged in relation to the value of the services rendered and the ability of the employer to pay, and, being in essence an enhancement of wages, should be dealt with through the existing machinery of negotiation for questions of employment. The companies also supplied the committee with copies of their existing schemes of machinery of negotiation for railway staff and for railway workshop staff, and, in addition, statements were submitted giving particulars of the various sections of staff receiving holidays with pay, the numbers employed in each section, and the length of holiday granted, together with details of the arrangements in regard to payment and leave on bank and public holidays.

The second part of the companies' evidence, presented by Mr. C. J. Selway on behalf of the R.C.H. Superintendents' Conference, dealt with the effect of holidays with pay upon the volume of holiday traffic, emphasising the importance to the expeditious handling of such traffic of the earlier holidays movement which railways have already done much to encourage.

The disadvantages to travellers of further increased holiday traffic in July and August were outlined. Anxiety of passengers to travel in the first parts of trains running in duplicate causes overcrowding. Restaurant car service is overtaxed, necessitating sittings for meals at times unduly early or late. Stations and the streets leading thereto become congested, which makes it necessary for travellers to allow more time for catching their trains. Moreover, the holiday traffic peaks at weekends in the summer months involve the maintenance of equipment which during the rest of the year is in excess of requirements.

To show the inconvenience to the public likely to ensue from a sudden addition to the extensive holiday traffic of July and August, the evidence presented the following particulars of the disparity in coaching train mileage already existing between these months and the rest of the year:—

Period of four weeks ended, 1936	No. of miles	Percentage
February 22 ...	19,708,104	100
May 16	20,135,832	102
June 13	21,565,916	109
July 11	22,783,614	116
August 8	24,317,181	123
September 5 ...	23,641,639	120

To illustrate the occupation of the running lines by passenger train services the following particulars of the total number of passenger trains (booked and relief) dealt with at selected points on Saturday, July 31, 1937, compared with Saturday, June 5, 1937, were quoted:—

Saturdays	Crewe (L.M.S.R.)	York (L.N.E.R.)	Taunton (G.W.R.)	Victoria (Southern) to coast resorts and Continent	Waterloo (Southern) to coast resorts and Continent
July 31, 1937 ...	599	390	316	252	163
June 5, 1937 ...	469	266	194	116	62

The following statement was submitted showing the number of passenger journeys in connection with the principal holiday traffics originating on the systems of the four main line railway companies, month by month, during the year 1936, with the percentage comparison for each month to the yearly total:—

Month	Day, half-day and evening excursions (including cheap day tickets and experimental fares)		Monthly return, period excursion, night travel, week-end and tourist tickets		Total	
	No.	Per cent. to yearly total	No.	Per cent. to yearly total	No.	Per cent. to yearly total
January ...	30,280,869	7·2	2,412,211	4·5	32,693,080	6·9
February ...	28,114,889	6·7	2,484,259	4·7	30,599,148	6·5
March ...	30,249,739	7·2	2,531,912	4·7	32,781,651	6·9
April ...	32,925,131	7·9	4,522,201	8·5	37,447,332	7·9
May ...	34,024,326	8·1	4,442,268	8·3	38,466,594	8·1
June ...	39,885,674	9·5	4,436,870	8·3	44,322,544	9·4
July ...	39,623,371	9·5	8,158,906	15·3	47,782,277	10·1
August ...	50,443,157	12·0	8,768,665	16·4	59,211,822	12·5
September ...	36,523,618	8·7	4,839,902	9·1	41,363,520	8·8
October ...	34,532,621	8·2	3,531,166	6·6	38,063,787	8·1
November ...	29,667,103	7·1	2,584,891	4·8	32,251,994	6·8
December ...	32,893,537	7·9	4,709,083	8·8	37,602,620	8·0
Total ...	419,164,035	100·0	53,422,334	100·0	472,586,369	100·0

A further document was submitted giving a list of the principal town holidays, wakes and feasts in 1937. This showed that, although the holidays are to some extent staggered, the greater proportion still takes place in the months of July and August when the railway traffic is at its peak.

We comment editorially on this subject on page 865.

Road Transport Wages

A conference of delegates, representing municipal transport workers, met in Manchester on Tuesday, November 16, to consider the Joint Industrial Council award on their claim for a wage increase of 4s. a week. The council, as reported in our issue of October 29, has recommended an increase of 2s. a week for workers over 21, and 1s. a week below that age.

A resolution was moved that the conference accept the terms which emerged from the negotiations. An amendment was moved that the matter be referred back to the National Joint Industrial Council, but the resolution, on being put to the vote, was carried by just over a two-to-one majority. The new rates will come into operation with the first full pay period in December.

Workmen's Compensation

The Workmen's Compensation Bill, which is a Private Member's Bill, was introduced into the House of Commons on October 20, 1937, and is down for second reading on November 19.

The object of the Bill is to amend the law relating to workmen's compensation, and a report of the debate will be given in next week's issue.

Vassar-Smith Ambulance Shield Competition

The annual competition for the Vassar-Smith ambulance shield, open to teams from the G.W.R. Gloucester Corps, took place at the Spread Eagle Hotel, Gloucester, on November 6, and attracted an entry of six teams. Mr. F. H. Sprague acted as adjudicator, and the team test set by him was both ingenious and unusual, eliciting a good standard of work from the competitors. Mr. W. S. H. Williams, Divisional Superintendent, presided over the subsequent presentation proceedings, and was supported by Mr. H. Leslie Boyce, the City Member; the Mayor of Gloucester (Alderman Harry Harmer) and the Mayoress; Mr. L. J. A. Callaway, District Goods Manager; Mr. A. E. Walker, Joint Goods Manager, L.M.S. and G.W.R.; ex-Deputy Chief Constable A. W. Hopkins, and representatives of the St. John Ambulance Brigade.

The result of the competition was declared as under:—

1st.	D Team.	W. Flew, Captain, winner of Vassar-Smith Shield.
2nd.	A	,,	W. E. Haynes, Captain.
3rd.	B	,,	R. Gurney, Captain.
4th.	E	,,	A. Lander, Captain.
5th.	C	,,	J. Bloomfield, Captain.
6th.	F	,,	J. Grimes, Captain.

The shield was presented to the winning team by the Mayor, and individual prizes by the Mayoress. The City Member, presenting examination awards to members of the Gloucester class, and a number of gold medals for 15, 20, and 25 years' efficiency, complimented them on the fact that the corps had been in existence for 25 years. Appreciation of the presence and interest of the Mayor and Mayoress, and of Mr. Leslie Boyce, was expressed by Mr. Williams, who also paid tribute to the help and encouragement given so unstintingly by Dr. Sprague to the corps.

Forthcoming Events

Nov. 19 (*Fri.*).—Institute of Transport (East Midlands), at Welbeck Hotel, Nottingham, 7.30 p.m. Visit of President.

Nov. 22 (*Mon.*).—G.W.R. (Birmingham) Lecture and Debating Society, at Great Western Hotel, Snow Hill Station, 6.30 p.m. "The Co-ordination of Rail and Road Freight Transport. How can it be Achieved and Implemented?" by Mr. D. Blee.

Institute of Transport (Scottish), at Glasgow, 7.15 p.m. "Driving Tests," by Mr. G. Howarth. Paper by Mr. D. Falconer.

Southern Railway (London) Lecture and Debating Society, at Inst. of Civil Engineers, Great George Street, S.W.1, 6 p.m. "The Film Service of the German and other Railways," by Herr Müller-Hillebrand.

Nov. 23 (*Tues.*).—Institute of Transport (Birmingham Graduate), at Chamber of Commerce, New Street, 6.30 p.m. "Industrial Administration with Special Reference to Transport," by Mr. V. Pilbeam.

Institute of Transport (Leeds Graduate), at City Transport Department, 7 p.m. "Road Passenger Transport: the Relationship between Municipal and Private Enterprise," by Mr. A. Stone.

Institution of Locomotive Engineers (Manchester), at 36, George Street, 7 p.m. Discussion on Works Costing.

Permanent Way Institution (Ashford), 6.45 p.m. "Permanent Way for High Speeds," by Mr. W. A. Willox.

Nov. 24 (*Wed.*).—Institute of Transport (Metropolitan Graduate), at Windsor Castle Hotel, Victoria, S.W.1, 7 for 7.15 p.m. Annual Dinner.

Institute of Welding (Manchester), at College of Technology, 7.30 p.m. "Electrodes: Their Development and Uses," by Mr. J. Paterson.

Institute of Welding (South Wales), at Inst. of Engineers, Park Place, Cardiff, 7.30 p.m. "Welding Design," by Mr. J. Dorrat.

Institution of Civil Engineers, Great George Street, London, S.W.1, 6 p.m. "The Education and Training of the Engineer to meet Modern Requirements," by Prof. J. Baker.

Institution of Locomotive Engineers (London), at Inst. of Mechanical Engineers, Storey's Gate, S.W.1, 6 p.m. "The Hammer Blow with Axle-Hung Electric Traction Motors," by Mr. H. McClean.

Nov. 25 (*Thurs.*).—Institute of Welding (Leeds), at Griffin Hotel, 7.30 p.m. "Notes on Electric Welding," by Mr. E. Davies.

Institution of Electrical Engineers, Savoy Place, London, W.C.2, 6 p.m. "Scientific Activities of the late Hon. Sir Charles A. Parsons, O.M., K.C.B., F.R.S.," by Dr. G. Stoney.

Nov. 26 (*Fri.*).—Permanent Way Institution (Hull), at Lecture Hall, Paragon Station, 7 p.m. "Permanent Way for High Speed," by Mr. W. A. Willox.

Nov. 29 (*Mon.*).—L.N.E.R. Musical Society, at Liverpool Street Hotel, London, 8 p.m. Concert.

Nov. 30 (*Tues.*).—L.N.E.R. (York) Lecture and Debating Society, at Railway Inst., Queen Street, 6.45 p.m. "German Railways," by Mr. E. Arkle.

Dec. 2 (*Thurs.*).—Railway Club, at Royal Scottish Corporation Hall, Fetter Lane, London, E.C.4, 7.30 p.m. "The Evolution of Railways," by Mr. Charles E. Lee.

Dec. 3 (*Fri.*).—Institute of Transport (Nottingham Graduate), at Guildhall, 7 p.m. "L.N.E.R. Canals," by Mr. J. Twells.

Institution of Civil Engineers (Assoc. of Glasgow Students), at Inst. of Engineers and Shipbuilders, Glasgow, 7.30 p.m. "Railway Work in North China," by Mr. W. Leitch.

Omnibus Society, at Inst. of Marine Engineers, The Minories, London, E.C.3, 7 p.m. "London Area Developments," by Mr. Charles F. Klapper.

Dec. 4 (*Sat.*).—Stephenson Locomotive Society (Midlands-Northern), at 4, Bury Old Road, Manchester, 6.30 p.m. "A Railway Miscellany," by Mr. F. Carrier.

QUESTIONS IN PARLIAMENT

Service between Glasgow and Edinburgh

Mr. Robert Gibson (Greenock—Lab.) on November 10 asked the Minister of Transport if he would consider the inconvenience caused to persons desirous of travelling from Glasgow to Edinburgh in respect that the last available train leaves Glasgow at 9.50 p.m. from Mondays to Fridays; and if he would make representations to the railway companies concerned to provide a train that would leave Glasgow about 11 p.m. for Edinburgh.

Dr. Leslie Burgin: I am in communication with the railway companies concerned and will let the hon. and learned member know the result.

Main Lines Electrification

Mr. H. Day (Southwark, Central—Lab.) on November 10 asked the Minister of Transport whether he would give particulars of any recent communications received from the Railway Companies' Association relating to the further electrification of main lines; and was he now in a position to make a statement on the further improvements contemplated?

Dr. Leslie Burgin: The hon. member will, no doubt, have observed that the electrification of certain additional sections of the Southern Railway has been added to the Schedule to the Railways (Agreement) Act, 1935, by a certificate, a copy of which was laid before the House on November 2, 1937. I am informed by the Railway Companies' Association that, except for this modification, the position is the same as when my predecessor answered a question by the hon. member on this subject on May 6, 1936.

Railway Companies and Storage of Food

Mr. R. De la Bere (Evesham—C.) on November 10 asked the Minister for the Co-ordination of Defence whether the Government would consider consulting the chiefs of the four main-line railway companies with a view to obtaining their co-operation for the utilisation of their systems throughout the country for the storage of food for emergency purposes only.

Sir T. Inskip (Minister for the Co-ordination of Defence): The Government is already in consultation with the four railway companies regarding storage accommodation in relation to an emergency.

Coal Wagons

Mr. Ellis Smith (Stoke—Lab.) on November 15 asked the Secretary for Mines if his attention had been drawn to collieries having to retard production owing to a shortage of wagons; and would steps be taken to obviate this?

Captain Crookshank (Secretary for Mines): I have only had one such case recently brought to my notice and, while neither I nor my right hon. friend the Minister of Transport have statutory powers to deal with the matter, I am inquiring whether there is any action I can usefully take.

Mr. James Griffith (Llanelly—Lab.): Is it not now time for the Government to take the matter in hand seeing that it is quite 20 years since the Sankey Commission recommended that wagons should be pooled?

No answer was given.

Indian Railways

Mr. H. Day (Southwark Central—Lab.) on November 15 asked the Under Secretary of State for India whether he could state the total mileage of railways in India purchased and owned by the Government of India and the amount expressed in sterling, paid by that Government for the same; the total number of employees working on State railways as at the last convenient date; and the mileage of railways in India still under private control.

Lord Stanley (Under Secretary of State for India): The total mileage now owned by the Government of India, part only of which has been purchased, the rest having been constructed by the State either directly or through the agency of companies, is 29,722; the amount expended on purchase is about £160,000,000. The total number of employees on State-owned railways in India at the end of 1935-36 was about 650,000; the mileage which may be said to be under the control of private companies is about 2,500.

French State Railway Loans

Mr. R. De la Bere (Evesham—C.) on November 16 asked the Chancellor of the Exchequer whether the £40,000,000 lent to the French State Railways by British banks last January had his approval; and what were the terms of repayments.

The Chancellor of the Exchequer (Sir John Simon): The answer to the first part of the question is in the affirmative. The credit was to run for a maximum period of about ten months, repayments to take place during the period November 30 to December 24.

Losses by Breakage and Damage

Mr. W. S. Liddall (Lincoln—C.) on November 17 asked the Minister of Transport whether he would cause an inquiry to be made into the causes and extent of the losses by breakage and damage incurred by parcels and goods conveyed by railway, in order to determine one of the factors contributing to the high cost of distribution of retail goods.

Captain Austin Hudson (Parliamentary Secretary to the Ministry of Transport): I do not think that any useful purpose would be served by an inquiry.

Mr. Liddall: Would the hon. gentleman explain to the House why he has come to that conclusion?

Captain Hudson: I consider that this matter is primarily one between the individual trader and the individual railway company.

Mr. Liddall: That would have been a better reply.

Staggering Working Hours

Lieutenant-Commander R. Fletcher (Warwick, Nuneaton—Lab.) on November 17 asked the Minister of Transport if he had any statement to make as to the inquiries into staggering working hours; and if he proposed to call a conference of traffic authorities and employers to consider the matter.

Captain Austin Hudson: My right hon. friend has not yet fully completed the rather lengthy preliminary investigations which are necessary before he will be in a position to make any statement, but much has already been done.

Replying to a further question by Lieut. Commander Fletcher, Captain Hudson said that inquiries were being made to see what sort of a conference would be most suitable. They wanted to go into the matter very thoroughly.

Suggested New Scottish Ferry

Mr. J. Cassells (Dumbartonshire—Lab.) on November 17 asked the Secretary of State for Scotland if he had considered the proposal to inaugurate a ferry with State aid for passengers and vehicles between Coulport and Ardentinny across Loch Long, for the purpose of opening up to tourist traffic the entire Cowal shore and Roseneath peninsula; and if he had any statement to make.

Mr. W. Elliot (Secretary of State for Scotland): The hon. member has informed me of a proposal for a ferry across Loch Long which has been communicated to him by a correspondent. I have looked into the question but it does not appear that I have any power to give financial aid in carrying out the proposal. It is open, however, to the County Councils concerned to consider whether there is a case for the exercise of their powers under the Harbours, Piers, and Ferries Act recently passed.

Railway Company's Facilities for Borrowing

Mr. R. De la Bere (Worcester, Evesham—C.) on November 17 asked the Minister of Transport, whether, as regards the negotiations that were proceeding with the chiefs of the four main-line railway companies for the purposes of the utilisation of their systems throughout the country for food storage for emergency purposes only, the Government proposed to extend still further the facilities of the railway companies for borrowing through the Railway Finance Corporation Limited, or some similar concern, money at the rate of 2½ per cent., guaranteed as to

principal and interest by the Treasury.

Captain Austin Hudson: No, Sir.

West Brompton to the City Service

Mr. A. McLaren (Stoke-on-Trent, Burslem—Lab.) on November 17 asked the Minister of Transport if he was aware that there was no through service of trains to the City from West Brompton station; and if he would take steps to secure an improvement in this service and/or an improvement in the omnibus service.

Captain Austin Hudson: I am in communication with the London Passenger Transport Board and will let the hon. member know the result.

L.M.S.R. Train Collision

Mr. Robert Gibson (Greenock—Lab.) on November 17 asked the Minister of Transport if he had any statement to make regarding the collision between two express trains from Scotland early yesterday morning near Crewe.

Captain Austin Hudson: I understand from the L.M.S.R. that at 4.20 a.m. yesterday the 8.30 p.m. train from Perth to London collided at Crewe with the rear of the 10.30 p.m. train from Glasgow to London. There was a dense fog at the time. I regret to state that thirteen passengers, a guard, a sleeping car attendant and a fireman were injured. The only serious injury was to the guard. My right hon. friend has appointed one of his inspecting officers to hold an inquiry.

Mr. Gibson said the House would be glad that there had not been any serious injuries. They all knew the excellent record of the British railways for safe travelling, and it might well be the motto of the Ministry to make the roads as safe as railways.

Argentine Railways

Dr. J. W. Leech (Newcastle-upon-Tyne West—C.) on November 17 asked the Secretary of State for Foreign Affairs whether he was aware that the railways built in Argentina with British savings took annually more than one million tons of British coal and much railway equipment; that it was essential in the interests of our coal and heavy engineering export trades to defend savings lent to foreign countries which developed such exports; and would he represent to the Argentine Government that the injury done to the Anglo-Argentine railways by unremunerative railway rates, exchange taxation, and labour restrictions had created ill-feeling between the two countries and prevented the railways raising British capital by which to extend the Argentine pastoral and grain industries and mutual Anglo-Argentine trade.

Lord Cranbourne (Under Secretary of State for Foreign Affairs): His Majesty's Government is fully aware of the importance of the matters to which my hon. friend draws attention. As regards the last part of the question, I have nothing to add to the answer which I gave to my hon. and gallant friend the Member for Hertford on November 9.

R.O.D. Dinner

Colonel Speir's tribute to Sir Cecil Paget

The sixteenth annual Officers' Reunion Dinner of the Royal Engineers (Railway Operating Division) was held at the Trocadero Restaurant on London on November 12, with Lt.-Col. K. R. N. Speir, D.S.O., in the chair. These present were:—

Major F. W. Abraham, Captain G. S. Bellamy, Captain E. F. Blackwell, Mr. S. Booth, Captain H. K. Bostock, Major W. A. Brown, Captain F. L. Castle, Captain C. S. Claxton, Captain J. Clubley Armstrong, Captain A. D. Cook, Major C. H. W. Edmonds, Captain C. Grasemann, Captain F. Horler, Major G. J. Humbert, Mr. K. H. Leech, Lieutenant-Colonel G. S. Lynde, Captain R. M. T. Richards, Captain M. D. Robinson, Major H. G. Scott, Lieutenant-Colonel K. R. N. Speir, Lieutenant-Colonel R. Tandy, Captain F. Taylor, Major H. G. Thynne, Captain L. Trevor-Jones, Captain M. G. Tweedie, Colonel W. G. Tyrrell, Captain W. C. Williams, Captain W. A. Willox, and Lieutenant-Colonel J. S. Wilson.

After the loyal toast Colonel Speir proposed the toast of "Absent Friends," and mentioned that, since it was the first reunion dinner since the death of their Commanding Officer, Sir Cecil Paget, it had been decided to confine it to R.O.D. officers and a few friends closely associated with the formation of the division. It was, he said, the wish of Sir Cecil Paget that this annual function should continue, and that was his excuse for occupying the chair, however inadequately. He welcomed the opportunity of paying his tribute of great affection and intense admiration which he knew was shared by all who had had the privilege of serving under their late Commanding Officer. Equally with their Allies during the war they appreciated his sterling qualities, and they would be pleased to know that Lady Paget had received numerous letters from both civil and military authorities in France expressing appreciation of the work done by the Colonel.

Sir Cecil Paget was one of the outstanding figures in the railway world of our time, said Col. Speir. His method of train operation received world-wide recognition and had been copied by a number of railways throughout the world. Those who criticised adversely his system were not capable of understanding his methods and could not themselves obtain the efficient results he achieved. He was a born organiser, and made a success in whatever sphere of business he chose to set his mind. First as a works manager, then as Chief Operating Superintendent of the old Midland Railway, then as O.C. of the Railway Operating Division, and later as manager of a large steelworks in the Midlands, his success had been outstanding. And the secret of this success lay in his capacity for work, his extraordinary aptitude for mastering detail, and his power of concentration. Having made up his mind on a course of action he never lost the substance for the shadow; he was invariably correct in diagnosis, and the remedy followed automatically, but not until he was satisfied that his plan was feasible and that those who had to carry it out understood precisely what was required of them. He was greatly helped by his sense of humour and was always on the look out for fun. Nobody enjoyed a joke or a rag better than he did. Paget was a sportsman in the best sense of the word, a loyal friend and generous to a fault.

"We have lost a real pal," said Colonel Speir in conclusion, "and the world is the poorer by his passing."

Modern Electric Rolling Stock for Urban Operation

At the opening meeting of the 1937-38 session of the Great Western Railway (London) Lecture and Debating Society, Mr. W. S. Graff-Baker, Chief Mechanical Engineer of the London Passenger Transport Board, gave a lecture on "Modern Electric Rolling Stock for Urban Operation." The lecture was illustrated by lantern slides showing the development of this rolling stock in England and elsewhere. Mr. Cyril Lloyd, a Director of the G.W.R., was in the chair.

Mr. Graff-Baker said that his subject presented problems quite different from those involved by other kinds of rolling stock. They were those involved in carrying passengers quickly through a series of closely spaced stations under conditions of high traffic density. The speaker dealt particularly with the requirements of trains for urban operation. The first of these, which was the ability to get away from stations as quickly as possible, raised the problem of constructing rolling stock with electrical equipment which when fully loaded could attain full speed as quickly as possible. Considerations of cost, and maintenance of motors and electrical economy, combined to make, say 1·7 m.p.h. per sec. a sufficiently high acceleration for modern trains.

The requirement that trains should run at a reasonably fast speed between the stations was modified by the fact that high train speeds, since they necessitate widely spaced signals, tend to prevent the line being worked to its full capacity. Here therefore it was necessary to make a compromise. Trains should be able to stop as quickly as possible and, although brake blocks were used on every axle, owing to technical considerations and the comfort of passengers the maximum deceleration which was desirable

was not more than about 3 m.p.h. per sec.

Another problem was that of limiting the duration of the station stops. This was one of the main factors influencing the design of rolling stock. The use of saloon stock with sliding doors instead of compartment type stock was determined by the necessity for quick loading and unloading in the rush hours. Pneumatically-operated doors were, primarily for reasons of safety, replacing those hand operated sliding doors which were still in use on the subsurface railways. On the most recent trains the pneumatically-operated doors could be operated by the passenger after permission had been given by the guard. The advantage of this system was that it meant that all doors did not have to be opened at stations exposed to the weather.

As far as seating arrangements were concerned, the combination of cross and longitudinal seats was governed by considerations of capacity during the rush hours, and comfort during the slack hours. The greatest degree of comfort which was economically possible should be provided. Passengers in the slack hours, as well as the rush hour travellers, had to be attracted, and it was therefore desirable that comfortable seats, good lighting and modern design should characterise the rolling stock. There should, too, be as little noise and vibration as possible. Equal care should be taken to make the driver's and guard's accommodation as convenient as possible. In all these respects modern urban electric trains showed a progressive improvement under increasingly difficult conditions.

Charges of Non-Amalgamated Railways

Statutory Rules and Orders have now been published embodying the decision of the Railway Rates Tribunal to allow to the non-amalgamated railway companies and committees the 5 per cent. increase in standard charges which had been allowed to the four amalgamated railways by the Tribunal in July last and became operative on October 1. The increase in the case of the non-amalgamated railways is operative as from October 24. To each non-amalgamated railway a schedule of charges of one of the amalgamated railways had been made applicable in 1927, and the four statutory rules and orders now published sanction the necessary modifications in each schedule, setting out the railways to which it applies. Each order is dated October 20, 1937. The hearing by the tribunal of the applications for the 5 per cent. increase was begun on October 5 and adjourned to October 20, when the tribunal authorised the increase in standard charges and exceptional rates, but was not prepared to deal with fares below the standard.

S.R. & O., 1937, No. 994, refers to the railways to which the Great Western Railway Schedule applies, and these are :—

Brynmawr & Western Valleys Railway.
Clifton Extension Railway.
Great Western & Great Central Railway Joint Lines.
Ludlow & Clee Hill Railway.
Severn & Wye & Severn Bridge Railway.
Shrewsbury & Hereford Joint Railway.
Shrewsbury & Wellington Joint Railway.
Shrewsbury & Welshpool Joint Railway.
Tenbury Railway.
Vale of Towy Railway.
West London Railway.
West London Extension Railway.

Railways to which the L.M.S.R. Schedule applies are the subject of S.R. & O., 1937, No. 995, and these are the following :—

Abersychan & Talywain Railway.
Birkenhead Railway, including the West Kirby Lines.
Carlisle Station Lines.
Dowlais & Merthyr Railway.
Dundee & Arbroath Joint Railway.
Halesowen Railway.
Mersey Railway Company.
Midland & Great Northern Joint Railway.
Nantybwch & Rhymney Railway.
Newark Joint Curve.
Otley & Ilkley and the Swinton & Knottingley Joint Railways.
Princes Dock Line.
Railways authorised by the Mid-Nottinghamshire Joint Railways Act, 1926.
Ribble Branch Joint Railway.
Rothesay Dock Line.
Sutton Bridge Dock Company in respect of railways forming part of the undertaking.
Tottenham & Hampstead Junction Railway.
Whitechapel & Bow Railway.
Wrexham & Minera Railway.

S.R. & O., 1937, No. 996, gives the names of the following railways to which the L.N.E.R. schedule applies :—

Axholme Joint Railway.
Cheshire Lines Railway.
Southport & Cheshire Lines Extension Railway.
Doncaster, Black Carr, East Junction, to the St. Katherine's Junction Railway.
Dumbarton & Balloch Joint Railway.
Felixstowe Dock & Railway.
Forth Bridge Railway.
Great Central, Hull & Barnsley, and Midland Joint Lines.
Nottingham & Leicestershire Joint Lines.
Joint Railways from Halifax to Holmfield and from Holbeck to Leeds.
Halifax High Level and North & South Junction Railway.
Hammersmith & City Railway.
Lofthouse & Methley Joint Line.
London Passenger Transport Board (in respect of the railway which immediately before July 1, 1933, was the railway of the Metropolitan Railway).
Great Central & North Staffordshire Railway Committee.
Manchester, South Junction & Altrincham Railway.
Metropolitan & Great Central Joint Committee.
Metropolitan and London & North Eastern Railways (Watford Joint Railway).
Metropolitan & Metropolitan District Joint City Lines and Extensions Railways.
Norfolk & Suffolk Joint Railways Committee.
Oldham, Ashton & Guide Bridge Junction Railway.
Port of London Authority.
South Yorkshire Joint Line.
Great Central & Midland Joint Committee.
Stalybridge Goods Branch.
Stobeross & Kelvinhaugh Joint Line.

The Southern Railway schedule applies to the following railways with which S.R. & O., 1937, No. 997, deals :—

East London Railway.
Easton & Church Hope Railway.
Salisbury Market Branch Railway.
Somerset & Dorset Railway.
Weymouth & Portland Railway.

Freight Rebates Scheme Review

The Railway Rates Tribunal, sitting at the Law Courts on Wednesday, was unable to proceed with the 1937 review of the operation of the Railway Freight Rebates Scheme, because of the indisposition of one of its three members, Mr. John Quirey. The chairman, Mr. Bruce Thomas, K.C., said that a further sitting would be necessary to deal formally with the review; but at his invitation Mr. Alfred Tylor, who represented the four main-line railway companies, took part in a "preliminary discussion." The companies are applying for an increase from a half to one per cent. of the companies' total rate relief in the sum to be paid out of the Railway Freight Rebates Fund for administrative expenses.

Mr. Tylor explained that the Court was required to review the operation of the scheme for the year ended September 30 last, and to consider whether any modification should be made for the year ending September 30, 1938. The division of the year under review into two parts was the result of the Railway Freight Rebates Act, 1936. Net revenue of the freight rebates fund from October 1, 1936, to December 31, 1936, including £1,066,990 balance brought forward, was £2,079,165. After allowing for rebates paid there was a net balance of £978,882. Net revenue of the fund from January 1, 1937, to September 30, 1937 was £1,190,566, and after deducting the amount attributable to rebates there was a debit balance of £7,096.

Sir William Wood, Vice-President, Finance and Service Departments, L.M.S.R., gave reasons in support of the companies' proposal that the sum of £978,882 be retained in the fund pending adjustment.

The hearing was adjourned until Thursday, November 25.

FOREIGN VISITORS.—The Travel and Industrial Development Association states that the total number of holiday visitors to the British Isles in September was 26,957, an increase of 2,025 over the corresponding period of last year. The combined total of holiday and business visitors was 36,133, an increase of 2,176. American holiday visitors numbered 7,271, an advance of 1,426. The total number of holiday visitors for the first nine months of this year was 267,305. This is an increase of 27,715 over the corresponding period of the record year of 1936. Week-end and day visitors from France and Belgium are not included in these figures, nor are the numerous overseas British visitors, estimated at an annual figure of 200,000, who travel with British passports and are not recorded at the ports.

RAILWAY AND OTHER MEETINGS

Central Argentine Railway Limited

The annual general meeting of the Central Argentine Railway Limited was held at River Plate House, Finsbury Circus, London, E.C., on November 11, Mr. W. Howard-Williams, C.B.E., Chairman of the company, presiding.

The Secretary (Mr. Ronald Leslie) read the notice convening the meeting and the auditors' report.

The Chairman, in moving the adoption of the report and accounts, said the results of working would have enabled shareholders to appreciate that the year under review was a great improvement on its predecessor, and was, indeed, the best for the last seven years. The tonnage handled was the greatest in the history of the company. However, they could not rest satisfied until they had once again reached the stage of at least some dividend on all classes of stocks. Nevertheless, the results of the year under review had enabled them to pay the dividend on the 4½ per cent. preference in full, and, after a lapse of five years, to resume payment of dividends on the 6 per cent. cumulative preference stock. In addition, they had made a special contribution of, in round figures, £157,000 to contingencies fund, whilst maintaining the carry forward at slightly above last year's figure. At the same time, they had been able largely to strengthen the renewals fund, after a number of years during which renewals had had to be reduced to the indispensable minimum.

Expressed in another way, the results might best be summarised by saying that the receipts, compared with last year, showed an increase of 25 per cent., whilst the working expenses, emitting renewals contributions, showed an increase of only 5 per cent.

Another factor responsible for the heavy gross receipts was that the maize crop of the year 1935-36 was harvested in such a damp condition that its immediate transport was not practicable, and this, coupled with slack demand, led to the postponement of its shipment in very large part until the opening months of the financial year 1936-37.

As the development of the country proceeded, the company's dependence on the fluctuation of harvests should diminish. The evidence of the increasing growth of new industries in the zone in which the company operated gave reason for being optimistic as to the future. The cultivation of cotton had for some years past been taking root in Argentina, and in the last few years its cultivation had been gradually extended to the provinces of Tucuman and Santiago, which formed part of the company's zone and, in fact, experts had reported that almost the whole of the northern part of Argentina where their territory lay, was suitable for the cultivation of cotton. Furthermore, the Argentine National Ministry of Agriculture, with the co-operation of the Provincial Government and the company's own Rural Development Department, had decided to establish an experimental station for developing the tobacco industry in the province of Santiago del Estero near the township of Forres. This area was served exclusively by their company's line. Here might be another new source of revenue to render the railway, in time, less dependent upon grain traffics for its income.

Another hope for expansion of the railway revenue in the future came from the fact that the Argentine authorities were becoming increasingly awake to the possibilities of irrigation. The effect from the new dams to be erected should extend over a large area, and the resultant prosperity should give a distinct stimulus to the development of the northern provinces, from which the railway should derive benefit. As a final example of development, returns from the company's Villa del Rosario-Forres line showed increasing expansion, in that, in the year's accounts, gross receipts therefrom amounted to no less than £533,659. The opening up of this new zone should be a continuing process.

Increased Passenger Traffic

Passenger business on the whole had shown expansion, though the progress in earnings under this heading had been somewhat checked by road competition which had been intensified in recent months by the completion of a new arterial road paralleling the company's main line between Buenos Aires and Cordoba throughout a great proportion of the total distance of some 430 miles. To meet this situation, the company had in course of delivery a supply of diesel railcars. These, in conjunction with the adjustment of fares, the speeding up of services and the provision of greater excursion train facilities, should retain passenger traffic which might otherwise be attracted to the services of road competitors. As a set-off to the loss on the shorter station-to-station passenger traffic, which they could not help but lose to road transport, the company had been developing long-distance excursion traffic, and the number of journeys had risen from 1¼ million to 2 million in the course of the past year. At the same time, they might now look forward to definite progress towards the solution of the problem of road and rail transport by the new co-ordinative legislation. On the other hand, no progress could be reported in regard to modernising the out-of-date provisions of the Railway Law, which prohibited the railways from making pooling arrangements such as had proved so beneficial to all interests in England, and also from officially engaging, with the recognition by the Government of the necessary capital employed, in door-to-door delivery of goods.

Discussing the future, the Chairman said that the latest cable from Buenos Aires reported that the present state of the wheat and linseed crops was generally satisfactory. Present low figures of weekly traffic receipts were primarily due to smaller carry-over of maize; otherwise traffics were being well maintained.

As regards working expenses of the current year, they would have to face the fact that there would be a substantial increase. Almost every item of manufactured supplies used by the railway, and the most important item of all, coal, cost more today than at the same time last year. The greatest handicap from which they suffered—loss on exchange—was still with them, but, as they knew that the Argentine Government was fully aware of their hardships, and was desirous of helping as far as possible, they were hopeful that some form of alleviation would soon be found to relieve the railways of a part at all events of that exceedingly onerous burden. During the year, the Chairman had had helpful interviews with the Argentine President regarding the company's projected new station in Rosario. It had been possible to arrive at some promising bases for a future settlement more or less on the lines of a contribution by the municipality of Rosario towards the cost of a modernised station on the site of the present one; the municipality, in return, to receive the lands at present the property of the company which were destined for the much larger project which was formerly in contemplation, but which, under the new scheme, would no longer be required for that purpose. The President undertook to consider the matter on these lines, and the company was awaiting further news from the Government authorities.

The report and accounts were unanimously adopted.

WELDING IN L.M.S.R. STANDARD COACHES.—A paper (No. 5058), entitled "Some Developments in Railway Carriage and Wagon Construction," recently presented to the Institution of Civil Engineers, by Dr. P. L. Henderson, and for which he has been awarded a Webb Prize, describes in detail the latest L.M.S.R. carriage and wagon design and practice, incorporating extensive welding. The type of coach dealt with was the first in this country to embody both a completely welded underframe and bogies, and was placed in service early in 1934. Welding was used also in the body framing connections. This type of construction, now standard on L.M.S. main-line stock, was described in an illustrated article in THE RAILWAY GAZETTE of August 23, 1935 (page 305), on some new first class sleeping cars.

NOTES AND NEWS

British Timken Dinner.—The annual dinner of British Timken Limited took place on Tuesday, November 9, at the May Fair Hotel in London, under the chairmanship of Mr. M. B. U. Dewar.

Loudspeakers at Newcastle Station.—To assist in directing passengers on busy days at Newcastle Central station, the L.N.E.R. proposes to instal loudspeakers at 12 suitable places. This follows upon the introduction of loudspeakers at York station in May last, where they have been found of great assistance.

Fort William Station Improvements.—The L.N.E.R. intends carrying out alterations at Fort William station in order to improve the waiting room accommodation for passengers. A new general waiting room is to be erected on the south platform, and an improved ladies' waiting room will be provided on the opposite side of the concourse.

Manila Railway Co. (1906) Ltd.—The directors propose to apply the balance of approximately £11,500 of the sinking fund of 1937 for the "B" debenture bonds and stock of the company in the purchase of "B" debenture bonds and stock in order to satisfy the quota for 1937. Accordingly they invite tenders for the sale to the company of such bonds and/or stock.

New Railway in Kazakhstan.—A new line from Neldi to Djezkazgan is under construction through the Golodnoi Steppe of Central Kazakhstan. Over 200 miles of track have already been laid, and the remaining 60 miles are scheduled for completion by the end of the year. Neldi is a station on the Karajanda-Balkhash railway, and the new line is being built partly to cater for future extensions of the copper industry around Djezkazgan.

British Amalgamated Transport Limited.—A new road transport company with the above title has been formed to provide road goods services connecting the Midlands with other industrial areas and the chief ports. Mr. J. H. Thomas has been appointed Chairman. The company has an authorised capital of £275,000. Mr. Thomas has issued a statement in which he describes the carriage of traders' goods by road as "a public utility service of immense national importance," and insists, if it is to fulfil this function, upon the importance of a more planned and orderly development than in the past.

Argentine Railways Strike Settled.—The strike on the Entre Rios and Argentine North Eastern Railways has been settled and normal services are running as a result of the Governmental decree reducing the wage cuts to 6 per cent., applicable from September 3 last to June 30, 1938, and the deductions made in July and August are to be refunded. The employees were given a time limit of 48 hours to accept the decree and end the strike.

The Holyhead—Dun Laoghaire Service.—The L.M.S.R. is considering the question of placing new vessels on the Holyhead–Dun Laoghaire mail service. Plans are already in hand for steamers of the most suitable type to replace those which at present work the service.

German Railway Films.—The meeting of the Southern Railway (London) Lecture and Debating Society, originally advertised for November 4, will be held at the Institution of Civil Engineers, Great George Street, on Monday, November 22, at 6 p.m. Herr Müller-Hillebrand, Chief of the Film Service, German State Railway, Berlin, will present a lecture entitled "The Film Service of the German and Other Railways," which will be illustrated by films.

Accident to Scottish Expresses near Crewe, L.M.S.R.—On Tuesday last the Royal Highlander (8.30 p.m. Perth to Euston) ran into the rear of the first portion of the Night Scot (10.45 p.m. Glasgow to Euston) just north of Crewe station at 4.20 a.m. There was a thick fog at the time and the Night Scot was standing at a signal. Some damage was done to the last vehicles of this train and both lines were blocked. The undamaged portion of the Night Scot was later able to continue its journey. Thirteen passengers and three railway employees were slightly injured.

London Transport Players.—On each evening from Tuesday to Saturday of last week the London Transport Players presented, at the Scala Theatre, the ever-green musical comedy "Mr. Cinders." The play itself is a cheerful affair, and Mr. Cyril Corker's selection for the fifteen principal characters proved excellent. Adeline Sealy and James Lewis took the parts of Henry Kemp's (Ralph Harlow) daughter, Jill, and Sir George Lancaster's (William McIsack) nephew, Jim—a happier combination would be difficult to find. The London Transport Orchestra, under the direction of Frederick Doughty, as always, was a pleasure to hear, and the dancers and chorus provided a tonic worthy of special mention.

Electric Services on Luxembourg Line, Paris.—Last week's issue of THE RAILWAY GAZETTE contained an up-to-date map of the Paris Metro and a note of recent and pending extensions, including the line of the P.O.-Midi from the Luxembourg station southward to Sceaux Robinson and Massy-Palaiseau, which has been electrified for eventual operation by the Metro. Beginning last Tuesday, a number of the steam services between Paris and Robinson are being worked by the new Metro electric trains, although under the existing P.O.-Midi operation. Some of the services to Massy-Palaiseau will likewise be electrically worked from November 23, and it is probable that the Metro will take over the whole line on January 1 next, instituting an intensive all-electric service.

Basque Children Go Home.—Victoria station on Friday last echoed to the chatter of nearly 200 Basque children. They had found a refuge in this country in May last and were repatriated through the agency of the National Joint Committee for Spanish Relief. They left by the 10.5 a.m. train to Newhaven, and crossed by the day boat to Dieppe, *en route* for Irun and Bilbao.

Royal Visitors at Victoria.—King Boris of Bulgaria left by the Golden Arrow service from Victoria on Friday last, after his private visit to this country. Before leaving His Majesty was presented with a Bassett-Lowke model of the *Eton*, one of the "Schools" class of engine, by Mr. R. Holland Martin, Chairman of the Southern Railway. On Tuesday last, King Leopold of the Belgians arrived at Dover on a State visit to England and travelled by Royal special train to Victoria. H.R.H. The Duke of Gloucester travelled with His Majesty from Dover. The King met the Royal party at Victoria.

Road Accidents.—The Ministry of Transport returns for October of persons killed or injured in road accidents is as below. The figures in brackets are the fatalities for the corresponding period of last year:—

	Killed	Injured: Serious	Injured: Slight
England—			
Pedestrians ...	238 (242)	1,252	4,408
Others... ...	292 (294)	2,707	9,248
Wales—			
Pedestrians ...	10 (17)	49	171
Others... ...	14 (10)	135	327
Scotland—			
Pedestrians ...	26 (35)	194	568
Others... ...	38 (20)	254	615
	618 (618)	4,591	15,277

The total fatalities for the preceding month were 583, compared with 567 in the corresponding period of 1936.

Northern Ireland Traffics.—Passenger receipts for the first eight months of 1937 on railways wholly in Northern Ireland amounted to £216,530, against £211,075 for the corresponding period of 1936, and the number of passengers (excluding season ticket holders) rose from 4,383,439 to 4,412,678. Merchandise and mineral tonnage for the eight months fell from 410,475 tons to 391,928 tons, and the total goods traffic receipts from £150,692 to £143,484. Railways partly in Northern Ireland carried 4,032,489 ordinary passengers in the first eight months of 1937, against 4,075,361 for the corresponding period in 1936, but total passenger receipts rose from £318,400 to £330,093. The quantity of merchandise and minerals carried fell from 625,506 tons to 617,812 tons, and total goods traffic receipts from £417,443 to £412,953. On the purely northern railways the number of

livestock carried in the first eight months of 1937 rose from 131,011 to 170,979, and on the cross-border railways from 485,275 to 505,786.

World Power Conference.—A sectional meeting of the World Power Conference will be held in Vienna from August 25 to September 2, 1938. After the meeting there will be one or more study tours, of approximately a week's duration. The subjects for consideration will be the supply of energy for agriculture, small-scale industries, household purposes, public lighting, and electric railways.

Remodelling Euxton Junction, L.M.S.R.—Euxton junction, on the Euston-Carlisle main line of the L.M.S.R. between Wigan and Preston, is to be relaid on the principles described in THE RAILWAY GAZETTE of October 2 and 9, 1936, as used at Barassie junction near Troon. The junction will be realigned and the curves transitioned and canted by means of two-level chairs. At present speed on the main line is restricted to 60 m.p.h., but when the work is completed the standard maximum of 90 m.p.h. will be permitted. The restriction over the diverging line to Chorley will also be eased to some extent, as well as that over the two crossover junctions between the fast and slow lines.

Modern Developments in Railway Operating Practice.—Owing to a misprint in the report of Mr. Barrington-Ward's paper to the Institute of Transport, in our last issue, the author was quoted as having said that at a recently opened gravitation yard up to 2,800 wagons a day had been dealt with at an average staff cost of £4 a shunt. This should, of course, have read £4 a shift.

Redemption of British Loan to French Railways.—The French Government has decided to repay in December the £40,000,000 loan to French railways arranged in London early this year. At the time the credit was opened it was equivalent to fr. 4,000,000,000, but at the present level of the exchanges it amounts to fr. 6,000,000,000. Repayment, according to Reuters, is being effected without touching the gold reserve.

British and Irish Traffic Returns

GREAT BRITAIN	Totals for 45th Week			Totals to Date		
	1937	1936	Inc. or Dec.	1937	1936	Inc. or Dec.
L.M.S.R. (6,868½ mls.)	£	£	£	£	£	£
Passenger-train traffic...	419,000	393,000	+ 26,000	23,628,000	22,702,000	+ 926,000
Merchandise, &c. ...	541,000	517,000	+ 24,000	22,307,000	21,618,000	+ 689,000
Coal and coke ...	276,000	258,000	+ 18,000	11,429,000	10,769,000	+ 660,000
Goods-train traffic ...	817,000	775,000	+ 42,000	33,736,000	32,387,000	+ 1,349,000
Total receipts	1,236,000	1,168,000	+ 68,000	57,364,000	55,089,000	+ 2,275,000
L.N.E.R. (6,315 mls.)						
Passenger-train traffic...	281,000	267,000	+ 14,000	15,476,000	14,790,000	+ 686,000
Merchandise, &c. ...	373,000	362,000	+ 11,000	15,321,000	14,785,000	+ 536,000
Coal and coke ...	269,000	250,000	+ 19,000	11,154,000	10,446,000	+ 708,000
Goods-train traffic ...	642,000	612,000	+ 30,000	26,475,000	25,231,000	+ 1,244,000
Total receipts	923,000	879,000	+ 44,000	41,951,000	40,021,000	+ 1,930,000
G.W.R. (3,738½mls.)						
Passenger-train traffic...	169,000	168,000	+ 1,000	9,920,000	9,650,000	+ 270,000
Merchandise, &c. ...	213,000	201,000	+ 12,000	9,066,000	8,682,000	+ 384,000
Coal and coke ...	122,000	111,000	+ 11,000	5,022,000	4,506,000	+ 516,000
Goods-train traffic ...	335,000	312,000	+ 23,000	14,088,000	13,188,000	+ 900,000
Total receipts	504,000	480,000	+ 24,000	24,008,000	22,838,000	+ 1,170,000
S.R. (2,155 mls.)						
Passenger-train traffic...	263,000	252,000	+ 11,000	14,786,000	14,068,000	+ 718,000
Merchandise, &c. ...	66,500	63,500	+ 3,000	2,821,500	2,863,000	− 41,500
Coal and coke ...	31,500	33,500	− 2,000	1,339,500	1,374,000	− 34,500
Goods-train traffic ...	98,000	97,000	+ 1,000	4,161,000	4,237,000	− 76,000
Total receipts	361,000	349,000	+ 12,000	18,947,000	18,305,000	+ 642,000
Liverpool Overhead ... (6½ mls.)	1,271	1,187	+ 84	58,629	53,848	+ 4,781
Mersey (1½ mls.) ...	4,356	4,329	+ 27	188,814	183,502	+ 5,312
*London Passenger Transport Board ...	567,800	567,700	+ 100	11,259,200	11,216,100	+ 43,100
IRELAND						
†Belfast & C.D. pass. (80 mls.)	1,753	1,652	+ 101	117,766	119,036	− 1,270
" " goods	581	517	+ 64	21,765	24,437	− 2,672
" " total	2,334	2,169	+ 165	139,531	143,473	− 3,942
Great Northern pass. (543 mls.)	8,200	8,000	+ 200	507,800	493,050	+ 14,750
" " goods	9,650	10,050	− 400	425,800	440,950	− 15,150
" " total	17,850	18,050	− 200	933,600	934,000	− 400
Great Southern pass. (2,076 mls.)	27,985	26,709	+ 1,276	1,668,748	1,649,124	+ 19,624
" " goods	58,771	61,181	− 2,410	1,901,342	1,935,396	− 34,054
" " total	86,756	87,890	− 1,134	3,570,090	3,584,520	− 14,430

* 20th Week (before pooling) † 46th Week

British and Irish Railway Stocks and Shares

Stocks	Highest 1936	Lowest 1936	Prices Nov. 17, 1937	Prices Rise/Fall
G.W.R.				
Cons. Ord. ...	64¼	45½	61¾	−1
5% Con. Prefce. ..	126½	116¾	118	—
5% Red.Pref.(1950)	113	108½	110½	—
4% Deb.	119½	110½	109	+1
4½% Deb.... ...	121	114	111	—
4½% Deb.... ...	129	121	117½	—
5% Deb.	141	134	128½	—
2½% Deb.... ...	79⅛	74	69½	—
5% Rt. Charge ...	136½	130	127½	—
5% Cons. Guar. ...	135¼	127¾	125	—
L.M.S.R.				
Ord.	35⅝	17	29	−¾
4% Prefce. (1923)	83	52½	71½	−1½
4% Prefce. ...	92¾	81	81½	−1½
5% Red.Pref.(1955)	109¼	103¼	106	—
4% Deb.	111¾	105 9/16	105½	+1
5% Red.Deb.(1952)	119⅝	115½	113½	—
4% Guar. ...	106¾	101⅝	100½	—
L.N.E.R.				
5% Pref. Ord. ...	14	9	8	−½
Def. Ord.	7¼	4¾	4⅛	−⅛
4% First Prefce.	79¼	55¼	67½	−1½
4% Second Prefce.	31⅞	18¼	25½	−2
5% Red.Pref.(1955)	100½	77¾	99½	—
4% First Guar. ...	104½	98¾	95½	—
4% Second Guar.	99	90	89	—
3% Deb.	85¾	79	79	+1½
4% Deb.	109¾	104½	103½	+1
5% Red.Deb.(1947)	116¼	110½	110½	—
4½% Sinking Fund Red. Deb.	111½	107½	108	—
SOUTHERN				
Pref. Ord.... ...	98¾	82½	86	−½
Def. Ord.	27⅝	20⅛	19¼	−½
5% Pref.	120¾	118½	115	—
5% Red.Pref.(1964)	119¾	115¼	113½	—
5% Guar. Prefce.	136	129½	125	—
5% Red.Guar.Pref. (1957)	120	115¾	115	+1
4% Deb.	117 5/16	109½	107½	+½
5% Deb.	140	134	127½	—
4% Red. Deb. 1962–67	116½	110	106½	—
BELFAST & C.D.				
Ord.	9	4½	4½	—
FORTH BRIDGE				
4% Deb.	107	105	102½	—
4% Guar. ...	107 5/16	104	101½	+1
G. NORTHERN (IRELAND)				
Ord.	19½	9¾	6	—
G. SOUTHERN (IRELAND)				
Ord.	63	41	27	—
Prefce.	65	46	39	—
Guar.	97¼	81	70½	—
Deb.	99¾	83¼	86½	+½
L.P.T.B.				
4½% "A" ...	127¾	121	116½	—
5% "A" ...	138¼	133½	127½	+1
4½% "T.F.A." ...	111½	108½	107	+1
5% "B" ...	131¾	123¾	120½	+1
"C"	112½	93	81	+1
MERSEY				
Ord.	40¾	23	24½	—
4% Perp. Deb. ...	103	98	97	—
3% Perp. Deb. ...	78	74⅝	74½	—
3% Perp. Prefce.	68⅞	63¼	66½	—

CONTRACTS AND TENDERS

The L.N.E.R. is to renew 587½ miles of track and 70 bridges during 1938. The track renewal will involve the use of 144,000 tons of British steel for rails and chairs, and approximately 1,500,000 sleepers as well as several hundred tons of steel screws and spikes. This work, which will be spread over the year, is part of the L.N.E.R. annual renewal programme.

Arthur Smart & Sons Ltd. has received orders from the Egyptian State Railways Administration for 322 metric tons of cotton waste (Ref. No. E.S.R. 343. G. 3/37. Total cost, £5,232. Delivery f.o.b. Manchester).

Reynolds & Wilson Limited has received an order from the Bombay, Baroda & Central India Railway Administration, to the inspection of Messrs. Rendel, Palmer & Tritton, for one punching and shearing machine.

Beyer, Peacock & Co. Ltd. has received an order from the Great Western of Brazil Railway for three sets of oil burning equipment complete, for converting suburban locomotives.

Leyland Motors Limited has received the following orders from railway associated road transport operators :—

Wilts & Dorset Motor Services Limited ; two oil-engined Tigers.
Northern General Transport Co. Ltd. ; five oil-engined Titans and two oil-engined Tigers.
Western Welsh Omnibus Co. Ltd. ; two oil-engined Tigers.
New South Wales Department of Road Transport ; five oil-engined Titans.

Soc. Commerciale d'Ougree has received an order for 100,000 mild steel dogspikes from the Great Western of Brazil Railway.

The Crown Agents for the Colonies have recently placed the following orders :—

Chloride Electrical Storage Co. Ltd. ; accumulator spares.
Turners Asbestos Cement Company ; asbestos cement pipes.
Britannia Electric Cable & Construction Co. Ltd. ; cable.
General Cable Manufacturing Co. Ltd. ; cable.
W. T. Henley's Telegraph Works Co. Ltd. ; cable.
British Insulated Cables Limited ; cadmium copper conductors.
T. Bolton & Sons Ltd. ; cadmium copper wire, and copper ingots.
Stanton Ironworks Co. Ltd. ; cast-iron pipes.
British Copper Refiners Limited ; copper ingot.
Birmingham Battery & Metal Co. Ltd. ; copper rods.
Yorkshire Copper Works Limited ; copper tubing.
E. & E. Kaye Limited ; copper wire.
W. C. Jones Limited ; cotton waste.
Kitchen & Wade Limited ; drilling machines, and universal machine tool.
George Richards & Co. Ltd. ; drilling machine.
General Electric Co. Ltd. ; electrical materials and telephone equipment.
Churchill Machine Tool Co. Ltd. ; grinding machine.
Pirelli-General Cable Works Limited ; hard drawn copper.
Bullers Limited ; insulators for overhead transmission line.
G. Kent Limited ; Kent meters.
Hunslet Engine Co. Ltd. ; locomotive boilers.
Robert Stephenson & Hawthorns Limited ; locomotive boiler.
North British Locomotive Co. Ltd. ; locomotive spares.

The Egyptian State Railways Administration has recently placed orders for machine tools (Ref. No. E.S.R. 33.8.58), divided as follows :—

Wm. Muir & Company ; two high speed slotting machines (Total price, £878. Delivery f.o.b.).
Churchill Redman Limited ; four heavy duty shaping machines (Total price, £2,336. Delivery f.o.b.).
J. Lang & Sons Ltd. ; six heavy duty lathes (Total price, £2,481. Delivery f.o.b.).
H. W. Kearns & Co. Ltd. ; one horizontal boring machine (Total price, £1,066. Delivery f.o.b.).
Alfred Herbert Limited ; one capstan lathe (Total price, £696. Delivery f.o.b.).
Kitchen & Wade Limited ; two radial drilling machines (Total price, £594. Delivery f.o.b.).

Bridgework Required for South Africa

The South African Railways & Harbours Administration is calling for tenders (Tender No. 1539) for the supply and delivery of quantities of steelwork, including bolts, nuts, and rivets for bridges. Tenders, endorsed "Tender No. 1539 for Bridgework," should be addressed to the Secretary to the Tender Board, South African Railways & Harbours Headquarter Office, Johannesburg, to be received by January 17, 1938.

The Commissioner for Railways, Brisbane, Queensland, invites tenders for the supply of one diesel power unit suitable for a 15-ton 0-6-0 type 3 ft. 6 in. gauge locomotive. The unit is to include engine, gearbox, tail shaft, final drive and jack shaft. The engine must be capable of running on a cheap fuel oil. Tenders to be addressed to the Office of the Commissioner for Railways, Brisbane, Queensland, are receivable by December 14. A copy of the specification and general conditions of tender, together with a drawing, is available for loan at the Department of Overseas Trade, London, S.W.1.

The South African Railways & Harbours Administration is calling for tenders (No. 1551) for the supply and delivery of 16 4,000-gal. and four 6,000-gal. capacity steel parachute water tanks, complete with all necessary fittings. Tenders endorsed "Tender No. 1550 for Steel Parachute Tanks" should be addressed to the Chief Stores Superintendent, South African Railways Headquarters, Johannesburg, to be received by January 3. A copy of the specification and general conditions of tender, together with drawings, may be borrowed from the Department of Overseas Trade, London, S.W.1.

The South African Railways & Harbours Administration is calling for tenders (Tender No. 1515) for the supply and delivery of quantities of lamps (hand signal, enginemen's tri-colour gauge, van side and van tail), also fittings, including burners, collars, reservoirs, interiors, reflectors, glasses, lenses, &c., required during the period July, 1938, to June, 1939. Tenders endorsed "Tender No. 151 for lamps and fittings" should be addressed to the Chief Stores Superintendent, South African Railways & Harbours, Johannesburg, to be received by December 28. Samples of the lamps and burners offered must be submitted to the office of the Chief Stores Superintendent before the closing date for receipt of tenders. A copy of the schedule of requirements and general conditions of tender, together with drawings, may be borrowed from the Department of Overseas Trade, London, S.W.1.

The Treasury, on the recommendation of the Import Duties Advisory Committee, has issued the Import Duties (Drawback) (No. 12) Order, 1937 (S.R. & O., 1937, No. 1025), authorising, under the Second Schedule to the Import Duties Act, 1932, with effect from November 19, 1937, the allowance of drawback of Customs duties in respect of certain single-flanged wheels of iron or steel. Wheels of the type in question are extensively used in the manufacture of light railway wagons for mining, quarrying, &c., and in present circumstances price conditions render the use of foreign-made wheels necessary for the purpose of the keenly-competitive export trade in such wagons. The order, together with the recommendation of the advisory committee, is published by the Stationery Office (Cmd. 5602).

Exports of Railway Material from the United Kingdom in October

	Oct., 1937	Oct., 1936	Ten Months Ending Oct., 1937	Ten Months Ending Oct., 1936
	£	£	£	£
Locomotives, rail	37,715	41,617	865,443	1,095,615
Carriages and wagons	197,619	106,819	2,448,906	1,052,016
Rails, steel	81,397	70,998	1,155,222	1,018,615
Wheels, sleepers, fishplates and miscellaneous materials	218,215	138,873	1,385,951	1,250,372

Locomotive and rail exports included the following :—

	Locomotives Oct., 1937	Locomotives Oct., 1936	Rails Oct., 1937	Rails Oct., 1936
	£	£	£	£
Argentina	5,304	3,064	5,713	2,483
Union of South Africa	—*	—*	8,779	39,629
British India	9,960	16,702	12,272	13,854

* Figures not available

OFFICIAL NOTICES

Sudan Government

SUDAN RAILWAYS require a District Traffic Manager, not over 26 years of age, holding a University degree, with training in traffic working on an English or Overseas Railway.

The scale of pay for District Traffic Manager is from £E480 by periodical increases to £E936 per annum. (£E1 = £1 0s. 6d.) Promotion to higher posts is by selection.

After a probationary period of two years' service in the Sudan, the successful candidate would be eligible for appointment to the permanent service under Sudan Civil Service conditions. Permanent officials are pensionable.

Liberal leave in England is given on completion of from 1½ to 2 years' service in the Sudan and thereafter, for permanent officials, at regular intervals as provided for under the conditions mentioned above. Under these conditions also Assisted Leave Passage Allowance is granted.

Free passage on appointment. Strict medical examination is necessary.

Applications, giving full particulars of qualifications, experience and age, with copies of testimonials, should be sent to the Controller, Sudan Government London Office, Wellington House, Buckingham Gate, London, S.W.1, marking envelope "D.T.M."

THE MADRAS & SOUTHERN MAHRATTA RAILWAY COMPANY LIMITED invite Tenders for :—

14 BOILERS FOR LOCOMOTIVES, viz.,
7 for 4-6-0 Locomotives "AS" type—Broad Gauge;
7 for 4-8-0 Locomotives "GS" type—Metre Gauge.

Specification and Form of Tender can be obtained at the Company's Offices, 123, Victoria Street, Westminster, London, S.W.1.

Fee ONE GUINEA, *which will not be returned.*

Tenders must be submitted not later than 2 o'clock p.m. on TUESDAY, 14TH DECEMBER, 1937.

The Directors do not bind themselves to accept the lowest or any Tender and reserve to themselves the right of reducing or dividing the order.

By Order of the Board,
G. W. V. DE RHE PHILIPE,
Secretary.

"IMPROVEMENTS in and Relating to Rail Vehicles, and, more particularly, to Passenger Carriages." The Proprietor of British Patent No. 401,119 desires to arrange for the commercial working of this patent by sale outright or by licences granted on participating and reasonable terms. Particulars obtainable from TECHNICAL RECORDS LIMITED, 59-60, Lincoln's Inn Fields, London, W.C.2.

Buenos Ayres Great Southern Railway Company Limited

THE Directors of the Buenos Ayres Great Southern Railway Company Limited hereby give notice that the Register of Debenture Stockholders of the Company will be closed from Tuesday, the 23rd November, to Tuesday, the 30th November, 1937, both days inclusive.

By Order of the Board,
N. F. E. GREY,
Secretary.

River Plate House,
Finsbury Circus,
London, E.C.2
17th November, 1937.

Buenos Ayres Western Railway Limited

THE Directors of the Buenos Ayres Western Railway Limited hereby give notice that the Register of Debenture Stockholders of the Company will be closed from Friday, the 26th November, to Friday, the 3rd December, 1937, both days inclusive.

By Order of the Board,
N. F. E. GREY,
Secretary.

River Plate House,
Finsbury Circus,
London, E.C.2.
17th November, 1937.

RAILWAY AND OTHER REPORTS

Buenos Ayres Midland Railway.—The report for the year to June 30 last of this company, which is controlled jointly by the Buenos Ayres Great Southern and Buenos Ayres Western Railway Companies, shows that all rent due to date and payable by those companies has been received and distributed. The rent amounted to £161,882, and the sum brought in was £1,652. Outgoings were £3,631 for administration, £96,000 for debenture interest, £40,000 for preference interest, £20,000 for ordinary dividend, and £2,251 for interest on advances by the controlling companies, leaving £1,562.

North Western of Uruguay Railway.—The accounts for the year to June 30 last show a loss of £8,259, after charging interest (£6,590) on the 6 per cent. first and second debenture stock, £3,889 to bridge tolls guarantee deficiency, and £581 to income tax depreciation suspense account. The debit balance to be carried forward is £68,083. Gross receipts in sterling increased from £24,907 to £28,665, and working expenses from £24,098 to £28,642. Passenger receipts in currency increased by $8,620 and livestock receipts by $13,549, but, due to a heavy fall in Brazilian transit traffic, goods receipts were $12,693 lower. The controlled free rate of exchange averaged 26·28d. for the year, against an average of 23·53d. in 1935–36.

Uruguay Northern Railway.—Gross receipts for the year to June 30, 1937, amounted to £11,689, against £9,941, and working expenses to £10,923, against £9,572, leaving net receipts £766, against £369. The operating ratio was reduced from 96·29 per cent. to 93·45 per cent. Total net income (including £842 from exchange differences) was £1,701, but was £760 short of meeting the interest accrued (£2,450) on the 5 per cent. prior lien debenture stock and the charge of £11 for income tax, and the debit balance forward is increased to £13,876. More passengers were carried, mainly because of the railcar service inaugurated in August, 1936, and there was an increase in livestock traffic.

Midland Uruguay Railway.—The net result for the year to June 30, 1937, was a profit of £22 (against a loss of £387), after charging interest (£11,073) on the 5 per cent. prior lien debenture stock, transferring £25,427 to redemption account, and providing for income tax and National Defence Contribution. The debit balance carried forward is reduced to £52,776. Gross receipts, at £105,718, showed an increase of £19,293, and working expenses were £19,181 higher, at £98,117, the operating ratio being 92·81 per cent. against 91·34 per cent. Exchange differences brought in £6,123. All classes of traffic, except wool, contributed to the increase in gross receipts, and the bad state of the roads after the previous year's excessive rainfall again reduced road competition.

Trans-Zambesia Railway.—Results for the year 1936 include for the first time a full year's working of the southern approach to the Zambesi bridge, and the figures are not strictly comparable with those for 1935. Gross receipts amounted to £149,991, working expenses to £99,913, and net receipts to £50,078 (against £39,466). Working expenses, including the southern approach, the river service, and the amounts charged to renewals, were 66·51 per cent. of the gross receipts, compared with 69·64 per cent. in 1935. Total tonnage rose from 64,454 tons to 81,498 tons. Included in the revenue account is a sum of £66,032 due from the Nyasaland Government under the guarantee. The Colonial Office is sending a commission of enquiry to Nyasaland, and it is hoped that the Commissioner will be able to make such recommendations as will ensure the planned and systematic development of production.

Hants & Dorset Motor Services Limited.—An interim dividend is being paid of 4 per cent., tax free, on account of the financial year ending March 31, 1938, on the ordinary shares. Last year the interim dividend was at the same rate, but less tax and on a smaller capital.

Associated Equipment Co. Ltd.—A final dividend is recommended of 13d. per unit of £1 stock free of tax, making 1s. 6d. per unit of £1 stock free of tax for the year to September 30 (equal to 10 per cent. subject to tax). A similar distribution was made last year.

John I. Thornycroft & Co. Ltd.—The preliminary statement of the improved results for the year ended July 31, and the proposal of the directors to pay arrears of preference dividends, were noted in THE RAILWAY GAZETTE of November 12. According to the full report now published, all sections of the business have contributed to the profit. The motor vehicle sales, of which over 40 per cent. was export business, have increased substantially, and the value of the orders in hand is approximately three times the corresponding figure of last year. Capital expenditure during the year amounted to £36,746, and commitments have been entered into for a considerably larger sum which will be expended during the current year.

Forthcoming Meetings

Nov. 22 (*Mon.*).—**North Western of Uruguay Railway Co. Ltd.** (Ordinary General), River Plate House, Finsbury Circus, E.C., at 2.30 p.m.

Nov. 26 (*Fri.*).—**Argentine North Eastern Railway Co. Ltd.** (Ordinary General), River Plate House, Finsbury Circus, E.C., at 2.30 p.m.

Railway Share Market

Very inactive conditions have ruled in all sections of the Stock Exchange, and there has been a general movement to lower prices. The disposition is not to expect a return of activity until international political affairs and the trade outlook in the United States are less obscure. Sentiment in the market is still entirely dominated by these factors, and, for the time being, may remain unaffected by the many indications that trade conditions at home continue to be favourable. In the circumstances railway stocks may not show satisfactory improvement in prices until there is a reversal of the surrounding trend of markets.

Had markets been less depressed it is likely the junior stocks of the Home railways would have made response to the past week's traffics, which show an aggregate increase of £148,000. As it was, L.M.S.R. ordinary has been dull around 29½, and rather lower prices were also made by the 4 per cent. preference and 1923 preference stocks, although £68,000 of the aggregate increase in traffics is provided by this railway's return. L.N.E.R. second preference was fairly steady at 26, aided by satisfaction with the £44,000 gain in traffics for the past week. At around 62½ Great Western ordinary came in for a good deal of profit-taking on the part of holders who had purchased earlier in the year when the price was lower. The highest price touched this year to date has been 67⅜ and the lowest 55¾. Last week the Southern's traffic gain was £12,000. The preferred stock has been dull at 86, as has the deferred at around 19½. Home railway debentures and prior charges had a firm appearance. Elsewhere a moderate amount of buying of London Transport "C" stock was reported up to 82.

Foreign railway stocks have been depressed by the very small amount of business in evidence, which resulted in an all-round lowering of prices. Those of South American railway companies were affected by the default in respect of Brazil's external debt, although it is realised that the latter provides no justification for lower prices for the railway securities. There was a fair amount of selling of the preference stocks of B.A. Gt. Southern, Central Argentine and B.A. Western, but the ordinary stocks were reported to be subject to very little liquidation, although they also made lower prices. Earlier reports regarding the estimated damage done to Argentine crops by frost are now regarded as much exaggerated. In other directions San Paulo relapsed further to 61. Antofagasta also moved against holders. American railway stocks reflected the weakness of Wall Street markets, and Canadian Pacific ordinary and preference were lower for a similar reason.

Traffic Table of Overseas and Foreign Railways Publishing Weekly Returns

	Railways	Miles open 1936-37	Week Ending	Traffics for Week: Total this year	Traffics for Week: Inc. or Dec. compared with 1936	No. of Weeks	Aggregate Traffics to Date: Totals: This Year	Aggregate Traffics to Date: Totals: Last Year	Aggregate Traffics to Date: Increase or Decrease	Shares or Stock	Prices: Highest 1936	Prices: Lowest 1936	Prices: Nov. 17, 1937	Prices: Yield % (See Note)
South & Central America	Antofagasta (Chili) & Bolivia	834	14.11.37	£ 14,510	– £ 1,630	46	£ 754,490	£ 631,200	+ £ 123,290	Ord. Stk.	25	15¼	13	Nil
	Argentine North Eastern	753	13.11.37	6,042*	– 3,793	20	198,327	187,349	+ 10,978	,,	12	12	6	Nil
	Argentine Transandine	—	—	—	—	—	—	—	—	A. Deb.	54	45	85	4¹¹/₁₆
	Bolivar	174	Oct., 1937	3,700	– 2,200	44	53,050	63,600	– 10,550	6 p.c. Deb.	9	5	8½	Nil
	Brazil	—	—	—	—	—	—	—	—	Bonds.	16	11½	14	3⁹/₁₆
	Buenos Ayres & Pacific	2,806	13.11.37	72,891	– 7,521	20	1,561,788	1,499,282	+ 62,506	Ord. Stk.	17½	6	7	Nil
	Buenos Ayres Central	190	30.10.37	$130,900	– $33,500	18	$2,546,700	$2,454,900	+ $91,800	Mt. Deb.	31½	11	28	Nil
	Buenos Ayres Gt. Southern	5,084	13.11.37	132,072	+ 7,896	20	2,408,003	2,212,843	+ 195,160	Ord. Stk.	31¾	13¾	16½	Nil
	Buenos Ayres Western	1,930	13.11.37	48,759	+ 2,759	20	909,120	803,114	+ 106,006	,,	29¾	11	13½	Nil
	Central Argentine	3,700	13.11.37	117,199	– 22,670	20	2,561,333	2,749,129	– 187,796	,,	32⁹/₃₂	8¾	13½	Nil
	Do.	—	—	—	—	—	—	—	—	Dfd.	21	4½	6	Nil
	Cent. Uruguay of M. Video	980	30.10.37	19,080	+ 955	18	276,620	273,022	+ 3,598	Ord. Stk.	7¾	3	3½	Nil
	Cordoba Central	1,218	13.11.37	28,410	+ 60	20	634,580	643,960	– 9,380	Ord. Inc.	5	1	2½	Nil
	Costa Rica	188	Sept., 1937	29,141	+ 14,946	13	78,466	52,763	+ 25,683	Stk.	36½	32	34	5⅞
	Dorada	70	Sept., 1937	17,206	+ 2,800	39	139,600	126,600	+ 13,000	1 Mt. Db.	107	101½	104½	5¾
	Entre Rios	810	13.11.37	9,026*	– 4,315	20	268,024	251,390	+ 16,634	Ord. Stk.	17	6	7½	Nil
	Great Western of Brazil	1,092	13.11.37	12,200	+ 500	46	353,300	356,100	– 2,800	Ord. Sh.	½	3/16	3/8	Nil
	International of Cl. Amer.	794	Sept., 1937	$388,185	+ $83,061	39	$4,426,545	$3,929,645	+ $496,900	—	—	—	—	—
	Interoceanic of Mexico	—	—	—	—	—	—	—	—	1st Pref.	½	–/6	½	Nil
	La Guaira & Caracas	22¾	Oct., 1937	4,155	– 150	44	51,820	45,850	+ 5,970	Stk.	9	3	8½	Nil
	Leopoldina	1,918	13.11.37	20,862	– 3,787	46	1,064,479	894,605	+ 169,874	Ord. Stk.	10½	3½	4	Nil
	Mexican	483	7.11.37	$232,900	– $17,400	19	$5,514,600	$4,827,400	+ $687,200	,,	1¼	¼	½	Nil
	Midland of Uruguay	319	Oct., 1937	8,915	+ 76	18	32,602	32,299	+ 303	,,	1½	⅛	½	Nil
	Nitrate	384	15.11.37	9,315	+ 3,297	46	135,662	107,905	+ 27,757	Ord. Sh.	63/6	41/9	2	Nil
	Paraguay Central	274	6.11.37	$3,011,000	+ $630,000	19	$59,901,000	$48,671,000	+ $11,230,000	Pr. Li. Stk.	85	71	80½	7⁷/₁₆
	Peruvian Corporation	1,059	Oct., 1937	84,277	+ 2,272	18	347,951	339,051	+ 8,900	Pref.	15	9	5	Nil
	Salvador	100	6.11.37	¢13,650	+ ¢1,966	19	¢229,484	¢205,811	+ ¢23,673	Pr. Li. Db.	18	16	22½	Nil
	San Paulo	153½	7.11.37	24,842	+ 3,690	45	1,474,939	1,309,970	+ 164,969	Ord. Stk.	86	46½	62½	8
	Taltal	160	Oct., 1937	2,815	– 850	18	12,885	12,420	+ 465	Ord. Sh.	11⁵/₃₂	14/–	7⅜	11⁷/₁₆
	United of Havana	1,353	13.11.37	15,136	+ 997	20	332,507	305,450	+ 27,057	Ord. Stk.	3¼	1	2	Nil
	Uruguay Northern	73	Oct., 1937	979	– 192	18	3,384	3,771	– 387	Deb. Stk.	5	3	3½	Nil
Canada	Canadian National	23,767	7.11.37	813,621	+ 30,036	45	33,834,353	31,430,504	+ 2,463,849	—	—	—	—	—
	Canadian Northern	—	—	—	—	—	—	—	— 4 p.c.	Perp. Dbs.	76	51	65½	6⅛
	Grand Trunk	—	—	—	—	—	—	—	—	4 p.c. Gar.	104¾	99¾	100½	4
	Canadian Pacific	17,228	7.11.37	610,400	+ 5,800	45	24,576,600	23,443,200	+ 1,133,400	Ord. Stk.	16¾	10⁵/₁₆	8	Nil
India†	Assam Bengal	1,329	20.10.37	35,760	– 8,617	28	735,386	694,632	+ 40,754	Ord. Stk.	87¾	82¼	77½	3⅞
	Barsi Light	202	20.10.37	2,460	+ 773	28	70,147	63,855	+ 6,292	Ord. Sh.	77½	65½	49	10⁵/₁₆
	Bengal & North Western	2,111	20.10.37	67,452	– 4,418	3	125,235	139,178	– 13,943	Ord. Stk.	319	292⅝	309	5¹⁵/₁₆
	Bengal Dooars & Extension	161	31.10.37	5,469	+ 1,138	29	86,108	77,649	+ 8,459	,,	127½	118	85¼	7
	Bengal-Nagpur	3,268	31.10.37	190,050	+ 12,435	29	3,980,029	3,508,163	+ 471,866	,,	104	100¼	91½	4⅝
	Bombay, Baroda & Cl. India	3,072	10.11.37	211,350	– 15,825	30	5,266,125	4,934,700	+ 331,425	,,	114	110½	111⅝	5⅜
	Madras & Southern Mahratta	3,229	20.10.37	135,450	+ 11,173	28	3,037,035	2,986,501	+ 50,534	,,	116½	108½	108½	7⅜
	Rohilkund & Kumaon	572	20.10.37	11,899	– 944	3	23,180	24,567	– 1,387	,,	311	286	310	5¹⁵/₁₆
	South Indian	2,531½	20.10.37	123,647	+ 7,254	28	2,346,835	2,255,674	+ 91,161	,,	107½	102⅝	102½	5⅝
Various	Beira-Umtali	204	Aug., 1937	103,370	+ 29,470	48	877,668	719,218	+ 158,450	—	—	—	—	—
	Egyptian Delta	620	31.10.37	11,850	+ 1,579	29	150,462	138,948	+ 11,514	Prf. Sh.	21¼	15⅞	11¼	Nil
	Great Southern of Spain	—	—	—	—	—	—	—	—	Inc. Deb.	11½	1⅛	3½	Nil
	Kenya & Uganda	1,625	Sept., 1937	191,212	+ 26,474	39	2,114,111	1,948,133	+ 165,978	—	—	—	—	—
	Manila	—	—	—	—	—	—	—	—	B. Deb.	50½	37	44½	7⅞
	Midland of W. Australia	277	Sept., 1937	15,003	+ 33	13	37,926	36,835	+ 1,092	Inc. Deb.	97	93½	95	4⁵/₁₆
	Nigerian	1,900	2.10.37	39,877	+ 9,655	27	1,256,855	785,241	+ 471,614	—	—	—	—	—
	Rhodesia	2,451	Sept., 1937	432,312	+ 96,504	52	4,635,398	3,543,364	+ 1,082,034	—	—	—	—	—
	South Africa	13,263	23.10.37	677,169	+ 17,314	30	18,924,702	17,777,633	+ 1,147,069	—	—	—	—	—
	Victoria	4,774	June, 1937	793,223	+ 89,530	52	10,135,291	9,689,925	+ 445,366	—	—	—	—	—
	Zafra & Huelva	112	Sept., 1937	15,307	+ 8,641	39	117,046	65,948	+ 51,098	—	—	—	—	—

NOTE.—Yields are based on the approximate current prices and are within a fraction of 1/16.

* Traffic affected by strike. † Receipts are calculated @ 1s. 6d. to the rupee. § ex dividend. Salvador and Paraguay Central receipts are in currency.

The variation in Sterling value of the Argentine paper peso has lately been so great that the method of converting the Sterling weekly receipts at the par rate of exchange has proved misleading, the amount being overestimated. The statements are based on the current rates of exchange and not on the par value.